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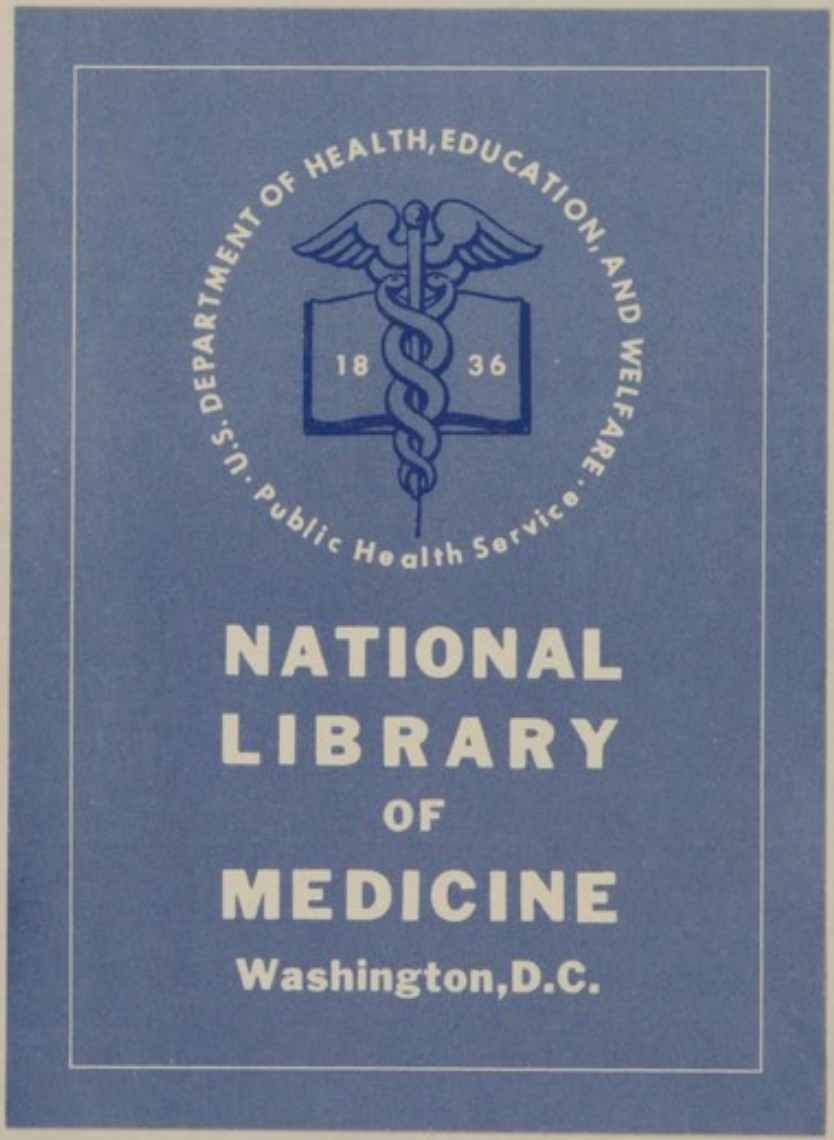

SPECIAL PATHOLOGY

AND

DIAGNOSTICS

WITH

THERAPEUTIC HINTS

BY

C. G. RAUE, M.D.

SECOND EDITION

REWRITTEN AND ENLARGED.

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TO

MY STUDENTS,

NEAR AND FAR,

IN WHOSE BEHALF THE FIRST EDITION WAS ELABORATED,

AND

TO THE MEMORY OF OUR MUTUAL FRIEND AND TEACHER,

CONSTANTINE HERING,

THIS SECOND EDITION IS DEDICATED.

PREFACE TO SECOND EDITION.

THE first edition had become old; it needed renovation. The pathological views had changed so grievously since its appearance, that a re-statement of the same throughout the work became a necessity.

Not so, however, the therapeutic hints. They are as true to-day as they were when written years ago, and, I am happy to say, have been reliable guides at the bedside to many physicians, and also a fruitful source, acknowledged or not, to many writers in journals and of books. What I had to do with these hints was this: to express their meaning still more accurately, to enlarge their spheres, and to add such new facts as the experience of others and my own would admit. This has augmented to a considerable extent even the therapeutic part of the work, and thus I may state in truth, that this second edition is re-written for the most part, that it is greatly enlarged and, I hope, also greatly improved.

Although I have given credit in the text to the several authors from whom I have drawn, it may be well to mention the principal sources for the pathological part: von Ziemssen's Cyclopædia, Frerich's Diseases of the Liver, Walton's work on the Eye and von Trœlsch's work on the Ear. Compare also the introductory remarks to the first edition. The therapeutic hints I have selected from the entire homœopathic literature, using all such indications as I deemed reliable and characteristic.

The chapter on the eye has been kindly and carefully overhauled in the manuscript by Dr. G. S. Norton, and that on the ear by Drs. G. S. Norton and Henry C. Houghton; their valuable notes will be found credited to them in the text.

The arrangement is the same as that of the first edition.

Although great pains have been taken to avoid clerical errors, nevertheless some have crept in, for instance, salycilic for salicylic and others. Wherever you find them, please correct them.

C. G. RAUE.

Philadelphia, 121 *North Tenth St.,*
in the month of September,
1881.

INTRODUCTORY REMARKS TO FIRST EDITION.

WHEN I was called upon to lecture on Special Pathology and Diagnostics, about four years ago, I looked around for a work which would furnish the essential points of these branches of medical education, together with Homœopathic Therapeutics, in a concise manner and up to the latest researches; but I looked in vain. I was obliged to prepare my own materials. The result of these labors seemed, in the estimation of my pupils and indulgent friends, worthy of a more permanent form and a wider diffusion than oral teaching affords.

In its preparation I have consulted the best recent as well as older works on the different subjects contained herein: Virchow, Rokitansky, Vogel, Griesinger, Hasse, Wintrich, Bamberger, Simon, Niemeyer, Bock, Bednar, Hübner, Küttner, Wagner, Skoda, Hebra, Wilson, Da Costa, Hughes, Barclay, Bryan, Hammond; Hahnemann, Hering, v. Boenninghausen, Rückert, Oehme, Hartmann, Jahr, v. Grauvogl, Müller, Meyer, Baehr, Kafka, Ludlam, Hale, Wells, Dunham, and others; New York Homœopathic Transactions and various journals. I have made free use of all of them as far as they suited my purpose, but have not followed any one exclusively. The arrangement, selection and elaboration of the whole are my own. The composition, however, would have unavoidably contained many Germanisms had they not been expurgated. I am indebted to Dr. G. R. Starkey, formerly Professor of Surgery in the Homœopathic College of Pennsylvania, for his kind offices in correcting

the manuscript so as to render it more agreeable to the English ear.

This book does not pretend to be a special Therapia, because, as v. Grauvogl already remarks: "*It is impossible to prepare a complete, special Therapia for any so-called disease; just as impossible as to describe all human beings of all times, because the conditions of getting sick change constantly in the course of time.*" What the genius epidemicus requires, for example, in an epidemic of whooping-cough at this season may not answer at all for a like epidemic of next year. Hence, my intention has been to give only *therapeutic* HINTS. These hints I have carefully selected out of the rich treasury of our Homœopathic literature, and I have added the results of my own experience. But all this does not make it perfect. Many a colleague, on opening the book and glancing over this or that chapter, will miss one or another remedy which *he* has been applying successfully in a certain form of disease. It lies in the nature of such a work that this must be so. On being informed, however, of such remedies and their characteristic indications, the author would be happy to receive and apply them.

This book does not give any prescriptions in regard to the *dose*, because that is still an open question, and must be left entirely to the free judgment of the practitioner. My hints are collected from all sorts of observations, with low, middle, high and highest potencies. I, myself, prefer the higher potencies; and it is possible that the more accurately we individualize the more we may become inclined to choose the highest. Others may think differently. So much is certain, that there are undoubted facts which seem to favor both sides of the question. Cases are recorded in which low potencies were given in vain, and a higher one of the same remedy at once effected a cure, and *vice versa*. Judge then for thyself.

THE AUTHOR.

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HEAD.

DISEASES OF THE BRAIN AND ITS MEMBRANES.

Anæmia.

A DEFICIENCY in the proper quantity of blood in the brain in general, or of arterial blood in particular. Inspection shows the grayish substance to be paler, or nearly white; and the white substance still whiter than normal on account of the absence of the usual blood-points. The blood-vessels are not entirely empty, though they contain comparatively less blood than usual, while in most cases an increased quantity of serum has been found between the subarachnoid spaces.

As CAUSES, may be mentioned:

1. *All influences which bring on general anæmia:* blood-letting, hæmorrhages, loss of vital fluids by too long-continued lactation or exhausting diarrhœas, especially *summer-complaint;* long-continued fevers, hepatization of the lungs in weakly persons from the constant wasting away of blood and muscles; and starvation, which cuts off all recuperation of the lost vital fluid.

2. *Congestion or fluxion of blood to other organs.* So may Junod's cupping-boot, an instrument which has been invented in imitation of the cupping-glass, to be applied to a whole limb, in order to cause an artificial afflux of blood into it, when used incautiously, produce anæmia in the brain, and for the same reason do we find persons of weakened activity of the heart faint more easily in a standing than in a lying position, because then the propelling force is not sufficient to overcome the natural gravity of the blood. We may add the effects of "*shock*," where, according to H. Fischer's theory, a reflex paralysis of the vasomotor nerves, especially the splanchnic, causes a collection of blood in

large quantity in the distended vessels of the abdominal cavity; the fainting away sometimes after the sudden expulsion of the fœtus, where the hitherto compressed abdominal vessels fill quickly after the compressing cause is removed; the fainting in consequence of too rapid withdrawal of ascitic fluid for the same reason.

3. *Compression or obstruction of the carotid or vertebral arteries*— by artificial ligation, tumors or emboli, which prevent the normal afflux of blood to the brain.

4. *Spasmodic contractions of these vessels*, as is evident in emotions of the mind, from which not only paleness of the face, but also swooning and unconsciousness may result; *nervous apoplexy* of some writers?

5. *Exudations, extravasations, tumors, depressions of the skull*, whereby the internal capacity of the skull becoming diminished, the necessary supply of blood to the brain is impossible.

Anæmia, when it consists in a deficiency of *arterial* blood in the brain, is caused by

6. *All those states of the system which prevent the normal oxygenization of the blood*, such as different heart and lung diseases. It has been shown by Kussmaul and Tenner that by sudden suppression of respiration, whereby the blood ceases to receive oxygen, the same symptoms are produced which a depletion will bring on.

In accordance with these causes the SYMPTOMS vary. In case of *sudden* depletion we have: sudden paleness of face with cold perspiration on forehead; gaping; slow breathing; ringing in the ears; dimness and flickering before the eyes; nausea, even vomiting; fainting away, which may be attended or followed by epileptiform convulsions.

In the *gradual* development of anæmia the symptoms differ in individual cases more widely; all, however, are characterized by a great paleness of the face. The cerebral disturbances take either the form of *depression* (mental torpor, drowsiness, somnolence, coma), or *excitation* (restlessness, sleeplessness, delirium, a condition mostly observed in cases caused by starvation, and in persons whose general state of anæmia is excessively aggravated by exhausting diseases or loss of blood). Vertigo is frequently present and headache occasionally. Specks and dimness before the eyes is common, and commoner still the ringing and buzzing in the ears; total amaurosis is rare. As regards the motor apparatus, we have either great weakness of all the muscles amount-

ing to temporary paralysis, or epileptiform convulsions. The latter rarely happen in the gradual form, while the first, at least as general weakness, is present in almost all cases.

The **anæmia** consequent upon **summer-complaint** was first and well described by Marshall Hall, who appropriately named it **hydrocephaloid**, on account of the great similarity of its symptoms to those of hydrocephalus acutus, and by him was divided into two stages—the *irritable* and *torpid*.

In the first the children are restless; throwing themselves about in bed; starting frequently in sleep, and giving piercing shrieks; they grate their teeth; their face looks red; the pulse is frequent, and the skin hot; and spasms even may occur; thus making the whole resemble very much an acute attack of hydrocephalus.

In the second stage, however, the children collapse, become apathetic; do not look at objects held before their eyes; their eyelids are half closed; pupils do not react against the light; their respiration becomes irregular; pulse very frequent and small; they gradually grow cold all over, first in the face; and, in fatal cases, they die with symptoms of coma.

THERAPEUTIC HINTS.—In the first place, where the patient suffers with general anæmia, we ought to provide for him a diet which will best supply the lost vital fluids. Especially in summer-complaint, wine and mutton-chops often do more good than medicine. Beef-tea, which principally consists of *Potassa* combinations, produces, according to Pflüger's experiments in small doses, an increase in the frequency and force of cardiac contractions; in large doses it acts as a poison, causing death by apparent paralysis of the heart. It ought to be used, therefore, with great caution.

In the second place, where the heart's impulse has become weakened, we ought to take care that the patient should lie quiet in a horizontal position, not to allow him to leave the bed too soon, or even to rise for the purpose of using the chamber.

The special treatment must be dictated by the conditions of each case; success is possible only when we take each case as a "unicum," and search for its corresponding remedy in the Materia Medica. The symptoms indicating the remedy may lie entirely outside of the group of those symptoms which constitute the diagnosis.

In general, however, the following remedies may be mentioned

as the most important in anæmic states after *loss of vital fluids:* Calc. carb., Carb. veg., China, Kali carb., Mercur., Nux vom., Phosphor., Phos. ac., Pulsat., Sepia, Silic., Staphis., Sulphur.

Dizziness, vertigo, better in a horizontal position, after eating; worse in the morning, and in the open air; complaint of old people: Ambra, Baryta c., Graphit., Lycop., Phosphor., Silic.

Delirium in consequence of great loss of blood: Arnic., Arsen., Ignat., Laches., Lycop., Phosphor., Phosph. ac., Scilla, Sepia, Sulphur, Verat.

Convulsions in consequence of loss of blood: Arsen., Bellad., Calc. carb., Cina, Conium, Ignat., Lycop., Nux vom., Pulsat., Sulphur, Verat.

Summer-complaint will find particular mentioning under the head of abdominal disorders.

Hyperæmia

Of the brain is that state in which it is overcharged with blood, either by *active congestion*, *rush of blood*, or *fluxion to the brain*, or *by stagnation* of blood in the brain, *passive hyperæmia*, or *hyperæmia by stasis.*

Post-mortem examination frequently reveals a large quantity of blood in the vessels and sinuses, especially of the dependent parts of the cranial cavity. This may be a mere post-mortem result, since in other cases nothing of the kind is to be seen. The gray substance appears swollen and darker than usual; the white substance presents, in exceptional cases only, a reddish hue. The subarachnoidal mashes contain no fluid.

In chronic cases the blood-vessels are almost always dilated; the substance of the brain is atrophied, and the subarachnoid spaces are filled with a large quantity of fluid, especially in the bodies of drunkards.

In some cases, however, *post-mortem* examination does not reveal any such objective signs. On the contrary, the brain appears entirely empty of blood, although during life every symptom pointed to hyperæmia. This fact has not yet been fully explained, and shows that appearances in the dead body do not always clearly reveal what has been going on in the living.

Here the question may be asked: Is hyperæmia possible at all? As the brain is encased in an unyielding capsule, how can *more* blood enter than there is flowing off? To answer this question

we have to point to the cerebro-spinal fluid as a means of regulating the intra-cranial circulation. This fluid easily recedes when the cerebral vessels become distended and enters again whenever the pressure subsides, and thus we find it always *absent* when there is a greater afflux of blood, and *present* in considerable quantity within the meshes of the textus cellulosus subarachnoidealis, where there is an anæmic state of the brain. Only when the brain is *atrophied*, there is also an increase of this fluid *besides* hyperæmia; and it is wanting again even if there be anæmia present, when the room of the skull is filled by tumors or effusion in the ventricles. As still other means for the regulation of the intra-cranial circulation recent researches consider: the perivascular lymph-spaces, the thyroid gland, the peculiar arrangement of the cerebral sinuses and the mechanism of the circle of Willis.

Congestion takes place—

1. *In consequence of an undue activity of the serous membranes* which, enveloping the brain, act like a suction-pump within the skull. This seems to be the condition of those persons who are subject to "rush of blood to the head."

2. *In consequence of obstructions to the flow of blood to other and different portions of the body, whereby it is diverted with increased force towards the brain.* We see examples of this condition in compression of the aorta abdominalis by tumors, effusions, or enlarged abdominal viscera; in the contraction of the capillaries of the skin during the chilly stage of intermittent fever; and in the suppression of menstrual and hæmorrhoidal discharges.

3. *In consequence of dilatation of the capillaries within the brain;* generally the result of the abuse of opium and alcoholic drinks and other narcotic substances; of the exposure to the rays of the sun; of long-continued irritation of the brain by mental overexertion.

4. *In consequence of paralysis of vasomotoric nerves.* For example: after cutting through the cervical portion of the sympathicus we find that the blood-vessels of the corresponding side dilate. So have also certain emotions similar effects; by them the normal innervation of the walls of the vessels is altered, they dilate and thus convey a larger mass of blood. This may be the key for the explanation of some sudden deaths which ensue in consequence of violent mental emotions, fright or joy.

Stagnation or hyperæmia by stasis may be caused—

1. *By compression of the jugular veins* from strangulation; by goitre, glandular tumors in the neck, or by aneurism of the aorta pressing upon the vena cava descendens.

2. *By violent expiratory movements*, as take place during violent fits of coughing, straining, and the blowing of instruments; to which also belongs Dr. Bonwill's method of producing a transient state of anæsthesia for the purpose of drawing teeth and performing minor surgical operations, by causing the patient to make rapid and deep inspirations.

3. *By diseases of the heart;* such as tricuspid insufficiency, stenosis of the venous orifice, and insufficiency of its valves.

4. *By some lung diseases*, as emphysema, extensive pneumonia, cirrhosis, and large pleuritic exudations; also diseases of the larynx, such as croup, œdema of the glottis and presence of foreign bodies.

The SYMPTOMS of hyperæmia are best arranged under two heads, in accordance with its two stages: that of *excitability* and *depression.*

To the first belong headache, sensitiveness to the light, noise and touch; flickering before the eyes; singing and ringing in the ears; pain and formication in the flesh; restlessness; jerking and automatic motions of the limbs; grating of the teeth; convulsions; dizziness; hallucination; sleeplessness and vivid dreams.

To the second, the stage of depression, belong insensibility to light, noise or pressure. In this stage also the limbs go to sleep, lose their mobility, and feel heavy as lead; the pupils become dilated; the pulse frequent, and the respiration quite slow, irregular, or snoring; and there is frequent vomiting.

These are the general symptoms which vary, however, greatly in individual cases. In some, signs of *irritation* predominate, such as headache, great sensitiveness of the senses, flickering before the eyes and ringing in the ears; restless, dreamful sleep; redness of face, injected conjunctiva, quick and full pulse. In some persons a cup of coffee or glass of wine brings on such a condition. In place of these external signs of hyperæmia there may be paleness of the face. In other cases, especially those of children during dentition, *convulsive motions* predominate, from the mere jerking, twitching of single muscles to general convulsions with loss of consciousness, vomiting, constipation, contraction of pupils, etc. Other cases are characterized by headache, sleeplessness, restlessness, a feeling as if they should go crazy,

delirium, symptoms, mostly brought on by overexertion of the brain. In still other cases we find this mental irritation increased to mania and rage after exposure of the head to the rays of the sun and the abuse of alcoholic drinks, especially in such individuals as use them periodically and then to excess. Still other cases are characterized by *depression* and *paralytic* symptoms, which it is often difficult and sometimes impossible to distinguish from apoplectic fits.

THERAPEUTIC HINTS.—Rush of blood to the head indicates:

Acon., dry and hot skin; the patient is very restless and beside himself; cries and complains much; is impatient and full of anxiety.

Amyl. nitr., heat, throbbing and feeling of intense fulness in the head; protruding, staring eyes, throbbing in the ears; flushing of the face, choking feeling in throat, along the carotids; tumultuous action of the heart.

Apis, jerking, crying out in sleep; frightful visions with fear and trembling; drowsiness; apathy; if Bellad. did not help.

Arnica, head hot, remaining body cool; after a blow or fall.

Aurum, heat and roaring noise in the head, fiery sparks before the eyes, worse after mental exertion; fearful and longing for death.

Bellad., hot and red face, sparkling eyes, and dilated pupils; throbbing of the carotids; drowsiness with inability to sleep, or drowsy sleep with starting; fearful mood; symptoms are aggravated by motion, leaning the head forward, or lying down; by light or sounds.

Bryonia, the patient feels as though his brain would burst through the forehead; nosebleed; puffed, red face; great irritability and fits of anger.

Calc. carb., the patient is worse in the morning, with puffiness of the face; palpitation of the heart after eating; swelling of the pit of the stomach; after mental overexertion.

Chamom., flickering before the eyes, often followed by headache; stopped-up feeling in the ears with humming noise, often when awaking in the morning; exceedingly irritable, fits of anger; dizziness. Stagnation in the portal system with disposition to piles; disagreeable feeling in the small of the back.

China, the slightest touch of the scalp is unbearable; earthy color of the face. Headache worse from moving the eyes or shutting them; better when sitting still in an upright position.

Ferrum, the face is hot and red, with swollen blood-vessels, accompanied by beating and humming in the head, and great sensitiveness of the scalp to touch.

Gelsem., when, during dentition, children become drowsy, comatose and convulsive; or when from the effects of heat there is dizziness, enlarged pupils, dimness of sight and a dull, confused headache spreading from the occiput over the whole head. Sleeplessness in delirium tremens.

Glonoin., throbbing headache, great restlessness; inclination to run away; violent pulsations of the carotids; after exposure to excessive heat or cold.

Hyosc., the patient is unconscious and delirious, with red, sparkling eyes, and bluish-red face; or drowsy, jerks in sleep, cries out in sleep, grates his teeth; subsultus tendinum. After Bellad.

Kali hydr., weakly constitution; disposition to tuberculosis; hammering pain in forehead; anxiety, restlessness, sleeplessness; sensation as though the head were larger; even if there is delirium and high fever.

Nux vom., the patient is worse in the morning, in the open air, after the use of coffee, liquors, or opium; with constipated bowels and suppression of hæmorrhoidal discharges.

Opium, stupefaction; snoring and rattling; slow breathing; slow pulse; sighing and moaning; bluish-red and bloated face; throbbing of temporal arteries; cold perspiration in face; falling of lower jaw.

Phosphor., heat on the top of the head, dizziness, buzzing and throbbing in the head; swelling under the eyes; and palpitation of the heart from mental emotions; emphysema.

Pulsat., the face looks yellowish, and yet feels hot, with constant chilliness; worse in a warm room; better in the open air; no thirst; scanty or suppressed menses.

Rhus tox., humming, formication and throbbing in the head; glistening redness of the face, and restlessness, which keeps the patient moving about.

Spigel., palpitation of the heart; violent headache; dizziness and stupefaction; frightfulness; oppression of the chest.

Spongia, pressing, beating in the forehead; redness of face, with anxious features; better in a horizontal position; goitre; heart disease.

Stramon., unconscious and senseless; loss of sight and hearing; face turgescent; convulsive motions of the head; wild or stupid

expression; great thirst with hydrophobia; or furibund delirium; greatest restlessness, wants to run away; sleeplessness.

Sulphur, flying heat in the face; diminished hearing; burning, throbbing and buzzing in the head; better in the room, worse in the open air; in hæmorrhoidal complaints; and after the suppression of cutaneous eruptions.

Ver. vir., sense of fulness, weight, distention in the head; giddiness, intense headache, throbbing arteries, stupefaction; double, partial, luminous visions; nausea, vomiting; tingling, numbness in limbs; mental confusion, loss of memory, convulsions or paralysis; during dentition; congestion from alcoholic stimulants.

In summing up as to the various causes, the following scheme may be of some use, although it must not be considered as exhausting the subject.

From mental emotions: Acon., Amyl. nitr., Coffea, Ignat., Opium, Ver. vir.

From mental overexertions: Aurum, Calc. carb., Nux vom., Phosphor., Sulphur.

From teething: Acon., Bellad., Calc. carb., Gelsem., Ver. vir.

From suppression of hæmorrhoidal discharges: Acon., Chamom., Calc. carb., Carb. veg., Nux vom., Pulsat., Sulphur.

From suppressed or scanty menses: Acon., Apis, Bellad., Bryon., Calc. carb., Carb. an., Chamom., Conium, Dulcam., Ferrum, Graphit., Laches., Lycop., Merc. sol., Phosphor., Pulsat., Sepia, Silic., Sulphur, Veratr.

From hypertrophy of the left heart: Acon., Aurum, Cact. grand., Glonoin, Jodium, Kalmia, Spigel, Spongia.

From insufficiency of the tricuspidalis: Bellad., Hyosc., Kali carb., Pulsat.

During a chill: Acon., Arnica, Arsen., Bellad., Bryon., Calc. carb., Chamom., Digit., Ferrum, Hyosc., Ipec., Lycop., Mercur., Nitrum, Rhus tox., Sabad., Stramon., Sulphur, Veratr.

From alcoholic drinks: Acon., Arsen., Calc. carb., Gelsem., Laches., Nux vom., Pulsat., Opium, Ver. vir.

From straining: Acon., Arnic., Bryon., Rhus tox.

In chronic cases: Aurum, Calc. carb., Ferrum, Phosphor., Spongia, Sulphur.

Vertigo.

This symptom so conspicuous in anæmia, as well as in hyperæmia of the brain and in many other quite different affections of

the body, has been defined by F. Niemeyer as "a hallucination, consisting of the vivid conception of a motion of the body or of the surrounding objects, which the patient imagines to see and to feel, although he himself and his surroundings are in perfect rest." This definition is undoubtedly defective. For if vertigo is a hallucination, colic and all other subjective symptoms would be. Kafka calls it "a sensation of seeming motion which, by full consciousness, is perceived to take place in oneself or in the surrounding objects, with a feeling of loss of balance of the body and an uncertainty in standing, walking, sitting or lying." He considers it as a peculiar affection of motor-nerves, caused either by the brain itself, or the cranial nerves or by some more remote ganglia or organs." This definition, too, wants correction. Let us consider a simple instance in which vertigo is produced in even quite healthy persons—the swift swinging around of the entire body in a circle. If we observe closely, we find that vertigo in such a case is experienced not exactly *during* but at the sudden cessation of this motion. Why? Because so long as the whole body moves in a certain direction, all its parts move with it, fluids and solids, just as you may, by means of a sling, swing water in an open vessel in a circle without losing a single drop; but stop its motion suddenly and vessel and water will fly to the ground. So when the rotatory motion of the body is suddenly stopped, the fluid parts of the body and especially the large collection of blood in the cranial sinuses must necessarily recoil and assume a motion in disharmony with the whole body. It is this commotion of the blood in the brain which is immediately felt and designated by the name of vertigo. Vertigo, then, we should say, is the sensation of an actual commotion of the blood within the cranial cavity. This separate, disharmonial motion affects the sensient nerves and is perceived by the sensorium, from which again, by reflex action, motor nerves are excited, hence the tottering, reeling or grasping for something, or the falling down, when the undue excitement should bring on momentary unconsciousness, or the seeming motion of the surrounding objects, etc. Thus we experience vertigo by all such motions of the body which are capable of producing a disharmonial motion of the blood within the cranial cavity, for instance, concussions of the body, dancing, bending forward or backward and rising, looking up or turning around quickly, swinging, sailing in vessels, etc. In regard to this latter it is a known fact, that one

gets *seasick* more readily on the *lakes* than on the ocean, because here the waves are shorter and more irregular than there, causing a much more abrupt shaking of the passenger. When the body of a passenger is thus suddenly concussed, the blood in the sinuses cannot follow the sudden motions of the solid parts of the body in equal tempo; it is caused to vibrate in a tempo of its own, and this perturbation or commotion of the blood within the sinuses we feel as vertigo, or *seasickness*. Seasickness, therefore, does not abate until a person exposed to being constantly tossed about, becomes so thoroughly accustomed to the motions of the ship, that he unconsciously anticipates all the pranks which the unruly waves may play and harmonizes his motions with those of the vessel, preventing in this way any further perturbation of the blood within the cerebral sinuses.

We have still to consider, however, other cases in which the unwonted motion of the blood within the cranial cavity is not so apparent a cause of vertigo as in the above mentioned instances. We also see vertigo produced under circumstances where such external concussions do not exist, as for instance by exudations within the brain, by tumors, tubercles, cancer or atheromatous degeneration of the cerebral blood-vessels, by great heat, mephitic exhalations, aromatic odors and above all by almost every one of the drugs proved, with but few exceptions, for instance, Fluor. ac. Does our view hold good even in these cases?

In the first place we should say that concussions of the body, swinging, sailing, etc., do not produce vertigo in all persons. There must be, then, something deeper still to be considered before we shall be able to fully understand the phenomenon of vertigo. And here I must draw attention to the arachnoid membrane which envelopes the brain and, like other serous membranes, is a shut sac. The functional action of this and all other like membranes may, according to C. Hering, be likened to that of a suction-pump. When excited it draws a greater amount of blood into the cranial cavity than when in a state of relaxation. It is thus one of the principal means by which the circulation within the brain is regulated. But its influence extends not only over the amount of blood in the brain, it at the same time controls more or less also the movement of the blood within the sinuses. The more healthful its action, the more readily it will regulate this flow and check any undue commotion, while during a relaxed state the slightest functional or mechanical cause may

bring on perturbation, and this explains why some persons do not feel dizzy from turning, dancing, sailing, etc., when others do. And if we further take into consideration that exudation, tumors, tubercles, etc., in short various kinds of morbid processes within the brain, and also numerous drugs when taken during a state of health, must necessarily affect the arachnoid, either excite or relax its action, we have sufficient reason to assume that in either case the regular flow and circulation of the blood through the sinuses must also be more or less disturbed, which would account for the feeling of vertigo in all such cases. We come thus to the conclusion that *vertigo*, even in those instances where its course is not so apparent as in cases of external concussion, etc., is nevertheless the feeling of an undue commotion of the blood within the sinuses, which is produced, or which, at least, is not checked by the arachnoid in consequence of its own excitation or relaxation.

Authors have spoken of hyperæmic or congestive, of anæmic, nervous toxic, epileptic, stomachic and psychic vertigo. All these different designations have reference to morbid affections with which vertigo is frequently associated, or which are the cause of disturbance in the circulation of the blood within the brain.

Vertigo may appear under the most varied conditions: in rest or motion; on stooping or rising, or turning the head; during lying, even in sleep; from dazzling or streaked light; from the quick motion of objects before the eyes, in passing a railing or riding in the cars; by the sight of an unpleasant object—a bleeding wound, a surgical operation, etc.; by looking down from a height or looking up to a height, and in many more other ways. It is rarely observed in children, more frequently in adults and oftenest in old age.

Its PROGNOSIS depends entirely on the nature of those morbid processes with which it is connected.

THERAPEUTIC HINTS.—Acon., congestive; heat and pain in head; red face; nosebleed; pulsation of carotids. When trying to sit up in bed, the patient tumbles over; he is afraid to rise lest he might fall again; must take hold of something. Stoppage of menstrual flow from cold, fright, fear or vexation; after habitual blood-letting.

Agar., heaving and whirling of objects around; tendency to fall forward; partial amaurotic blindness, with floating muscæ and

vibrating spectra; partial numbness of left side of tongue. Hyperæsthesia of smell; unusual sensitiveness to cold air; hysteria and nervousness brought on by exciting debate or by protracted mental application; by overexertion of the eyes; by strong light of the sun.

Anac., great forgetfulness; dim sight; on stooping and rising from stooping, he feels as if he were turning to the left.

Apis, headache; heat in head; red face; nosebleed; pulsation of carotids. Worse when sitting than when walking; extreme when lying down and closing the eyes.

Arg. nitr., chronic, as if every thing were turning around; dyspnœa; palpitation of the heart; paralysis of diaphragm; left half of body very weak; left arm or hand heavy and numb; trembling weakness brought on by walking with shut eyes; by walking in streets with high houses, which seem to fall upon him.

Arnica, as if every thing were turning around or falling upon him; ears feel stopped up when speaking, swallowing or blowing the nose; better in lying, disappearing on stooping; after bodily overexertions or injuries.

Ast. rub., single case by Petroz. Man has fits of vertigo, as if the head were suddenly concussed; head always hot, face red, pulse hard, contracted and frequent; obstinate constipation by good appetite; constant contractions of the muscles of the lower limbs; gait uncertain, because the muscles do not obey the will; restless and sleepless.

Arsen., hyperæsthesia of hearing; burning in stomach and vomiting; malarial with loss of appetite, vomiting and headache; dilatation of right ventricle, emphysema, bronchial catarrh; sleeplessness. During pregnancy, with pale, bluish, puffed face, blue lips and nails and undulation of jugular veins.

Aur. mur., hypertrophy of left ventricle, with great congestion towards head and face.

Bellad., acute and chronic; revolving; staggering, reeling, must take hold of something; transient unconsciousness; anxiety; shuns people, is bashful; head appears double; sees frightful things on shutting the eyes. Headache pressing, throbbing; gnawing pain in the bones of the skull, face and teeth; rush of blood to head and face; sometimes sensation as of icy-cold water streaming down from head to face; flickering and dimness before eyes; hyperæsthesia of eyes; enlarged pupils; buzzing in ears, with dulness of hearing; nosebleed; pulsation of carotids;

loss of appetite and vomiting; stitching pain in chest; slow pulse, weakness and trembling of limbs when walking; drowsy in daytime, sleepless at night; hysteria and general nervousness; epileptic vertigo. Worse on rising from lying, sitting or stooping; in standing; after eating. After typhoid fever; taking cold; violent fright; overexertion of the eyes, with muscæ volantes; from the smell of flowers, gas, etheric oils, turpentine, etc., with stupefaction. Some prefer Atrop. in some cases.

Borax, a feeling as if pushed from right to left and somewhat forward; on descending or being moved downward.

Bovist., in the morning with loss of consciousness and pressing pain in head.

Bryon., like whirling on sitting up, standing and walking; burning in stomach and vomiting; distention, passage of offensive flatus, and constipation; bronchial catarrh; emphysema; dilatation of right ventricle. After suppressed hæmorrhoids; bodily overexertion.

Calc. carb., stupefying; epileptic; hyperæsthesia of eyes; dimness of sight; abdominal congestion, distention, flatus, constipation; amenorrhœa, which has gradually developed; climaxis, with flushes of heat and sweat; hypertrophy of left ventricle, with congestion towards head and face; hypochondria, hysteria and nervousness; sleeplessness; tuberculous disposition; rhachitis; scirrhous tumors. Worse in morning, in walking out-doors, especially on suddenly turning the head, on stooping and ascending. Brought on by mental overexertion; by reading, fine sewing, etc.; by sedentary life, high living, excess in venere.

Calc. jod., glandular swellings on neck, goitre.

Carb. veg., venous stagnation in abdomen, flatus, constipation; from sedentary life; mental exertion; high living; spirituous drinks, tea, coffee, tobacco, opium.

Caustic., attacks at 11 o'clock A.M., with stitches in top of head, pain in back and small of back when rising from a seat; on looking upwards, inclination to fall towards left side; on stooping, to fall backward.

Chamom., fits of anger; congestion in portal system; distention from wind.

China, anæmic from loss of blood or vital fluids; hysteria and nervousness.

Coccul., intoxication, stupefaction; nausea, pressing and throbbing in temples; alternate going to sleep of either feet or hands;

difficult speech; distention of abdomen from wind; constipation; chlorosis. Worse on rising and after eating.

Coffea, hysteria and nervousness; sleeplessness.

Conium, frequent drowsiness; on bending the head forward, heaviness in occiput; dimsightedness; nosebleed in spring; venous abdominal hyperæmia and amenorrhœa; acrid fluor albus; torpid urine with mucus; climaxis, with flushes of heat and sweat; rhachitis and swelling of lymphatic glands.

Cyclam., dyspepsia; hyperæsthesia of the cutaneous nerves of the extremities; hysteria and nervousness.

Ferrum, anæmic from loss of blood.

Gelsem., intoxication, confusion, headache; dimness of sight; dilatation of pupils; general depression of system from heat.

Glonoin., congestive; forerunner of apoplexy; intoxication and heaviness of head, with bending the head forward; reeling, trembling, falling; headache; heat in head; redness of face; photophobia; injection of conjunctiva; flickering before the eyes; buzzing in the ears; pulsation of carotids. Worse on sitting up.

Graphit., hyperæsthesia of eyes; venous stagnation; constipation; incarceration of flatus. From overexertion of the eyes by reading, sewing, etc.

Hepar, hyperæsthesia of smell; decreased peristaltic motion; hard feces.

Hyosc., stupefaction; depressing mental influences; hypochondriacal; from the smell of flowers, gas, etheric oils, etc.

Ignat., epileptic; gastric symptoms; gaping; abdominal congestion; flatus; tingling as of ants; jerkings; heaviness of right arm; spinal affection; anæmia; sleeplessness; hystery and nervousness. Worse from slightest motion of head, especially stooping. Brought on by depressing mental influences; fear, anxiety, fright.

Ipec., malarial headache; loss of appetite and vomiting. In pregnancy, with pale, bluish, puffed face, blue lips and nails; undulation of jugular veins.

Iodum, goitre; hypertrophy of left ventricle, with great congestion towards head and face; hysteria and nervousness.

Kali carb., nausea and vomiting; after eating, with heat in head and red face; darkness before the eyes; sometimes one cheek hot, the other cold. Must lie down or he falls down. Before falling stitching pain in forehead, root of nose and eyes; fatty degeneration of heart.

Kali brom., goitre.

Kali hydr., glandular swelling on neck; rhachitis.

Laches., epileptic; can't bear anything coming near him; venous stagnation; constipation; flatulency; burning in stomach, vomiting and diarrhœa.

Lycop., head heavy; scathing, roaring and noises in head; fears to lose senses; ebulitions from stomach to chest and head; he gets hot, face reddens, eyes water and become dim; constant pain in back and small of back; venous stagnation in abdomen; distention; constipation; incarcerated flatus. Worse on stooping; when drinking.

Mercur., headache, nausea, loss of appetite; in bed and out of bed; can't rise and sit up for fear of falling; must lie down; feels like swinging, lying in bed. Receded cutaneous eruption.

Merc. corr., syphilitic tumors in the brain.

Merc. jod., syphilitic tumors in the brain.

Mezer., syphilitic affections of brain.

Natr. mur., with feeling of fainting; periostitis of scull; dyspepsia; abdominal congestion; flatulency; constipation; suppressed hæmorrhoidal discharge. From sedentary life; depressing mental influences; mental exertion; reading, sewing, etc.; high living; spirituous drinks, tea, coffee, tobacco, opium.

Nitr. ac., climaxis; syphilitic taint.

Nux vom., epileptic; malarial; revolving; sudden, like an electric shock; before vertigo, drawing headache with heat in forehead, yawning. Headache; loss of appetite and vomiting; burning in stomach after eating; dyspepsia; abdominal congestion; flatulency; constipation; hæmorrhoids; hysteria and nervousness; hypochondriacs. Worse after dinner or eating; when stooping and rising; sometimes at nights, waking out of sleep. Brought on by mental exertion or sedentary habits; high living; alcoholic drinks; smoking, coffee, opium; from the smell of flowers, gas, etheric oils, etc., attended with nausea; suppressed flow of hæmorrhoids.

Opium, stupefaction as after intoxication; drowsiness; red, glossy eyes; enlarged pupils; dimness of sight; pale face; decreased peristaltic motion, difficult defecation. Worse on sitting up in bed. After fright.

Phosphor., revolving, as if he would fall; malarial; headache; weight and throbbing in forehead on waking; rush of blood to the head; hyperæsthesia of smell; loss of appetite; nausea, vom-

iting; burning in stomach; abdominal congestion with flatulency; during pregnancy pale, bluish, puffed face, blue lips and nails, undulation of jugular veins; hypertrophy of left ventricle with congestion to head and face; dilatation of right ventricle; fatty degeneration of heart; emphysema; bronchial catarrh; sleeplessness; atrophy of brain in old age; scirrhous tumors; periostitis of skull. Worse morning and evening; after eating; during sitting. Brought on overexertion of the eyes, attended with muscæ volantes; by the smell of flowers, gas, etherial oils, turpentine, attended with fainting; by loss of vital fluids.

Phosph. ac., hypochondriacs after excess in venere; climaxis with flushes of heat and sweat.

Platin., overestimation of self.

Pulsat., hot head; flickering before eyes; stitch pain in ears and tearing in head; pale face; painful crawling in stomach; tearing in limbs; shifting rheumatic pains; scanty, retarded or suppressed menses; sleeplessness; chlorosis. Worse when sitting and lying; on getting up from a seat. Brought on after anxiety, fear and fright.

Rhus tox., tipsy feeling; in aged persons; dilatation of right ventricle; emphysema; bronchial catarrh; worse in morning after rising, with uncertainty in walking, wants to be supported by a cane or another person; better from continued motion; worse on getting up from lying, on turning, stooping. Brought on by bodily overexertion.

Ruta, overexertion of the eyes with muscæ volantes; bodily overexertion.

Sambuc., fatty degeneration of heart.

Sanguin., vertigo during sleep.

Sec. corn., hyperæsthesia of cutaneous nerves, especially of the spine.

Sepia, dyspepsia; venous hyperæmia in abdomen; constipation; flatulency; gradual developing amenorrhœa; hypochondriacs; climaxis with flushes of heat and sweat; sleeplessness. Worse when drinking. Brought on by mental overexertion; excess in venere.

Silic., stupefying; preceded by rush of blood to the head; oppression of chest and pit of stomach. Headache; menses too early, too protracted, too copious; after menses, fluor albus; venous stagnation in abdomen; constipation; incarcerated flatus; hypochondriacal; sleeplessness; tuberculous disposition; rhachi-

tis; periostitis; scirrhous tumors. Vertigo during sleep. Brought on by overexertion of the eyes from reading, sewing, etc.; by excess in venere.

Spigel., stumbling and falling as if intoxicated; pressing pain in top of head, worse from stooping, walking and talking; better when lying; hypertrophy of heart; feeling of fainting.

Spongia, goitre; hypertrophy of heart.

Staphis., hypochondriacal; depressing mental influences.

Stramon., twitching in face; spasm in chest; spasmodic laughing; worse at night on lying upon the side.

Sulphur, constant feeling of wavering in head and body, as if swinging and as if the bed were not wide enough to hold him; feeling of tightness in head, as if bound; dimness of sight; venous stagnation, and feeling of fulness in abdomen, constipation, flatulency; suppressed hæmorrhoids; receded or suppressed cutaneous eruption; occasional itching after itch; periostitis.

Tart. em., venous stagnation of abdomen with flatulency; during pregnancy pale, bluish, puffed face; blue lips and nails, undulations of jugular veins.

Therid., nausea with vertigo on closing the eyes, worse from noise and motion.

Thuja, epileptic; hair dry and finger nails ribbed.

Ver. alb., malarial with headache and loss of appetite; overestimation of self; hyperæsthesia of hearing; burning in stomach; vomiting and diarrhœa; venous stagnation in abdomen with flatulency; during pregnancy pale, bluish, puffed face, blue lips and nails, undulation of jugular veins; dilatation of right ventricle; emphysema; bronchial catarrh. Brought on by spirituous drinks, tea, coffee, tobacco, opium.

Zincum, in the occiput, with falling to the left when walking.

Zingib., with heavy limbs.

The following scheme was prepared by Kafka relating to nervous vertigo:

Vertigo in the morning: Calc. carb., Nux vom., Phosphor., Rhus tox., Natr. mur.
—— in the evening: Bellad., Pulsat., Cyclam., Sepia, Zincum, Laches.
—— when lying down: Pulsat., Cyclam., Arsen., Aurum.
—— when rising: Nux vom., Rhus tox., Coccul., Laches., Conium.
—— when walking: Pulsat., Lycop., Conium, Capsic., Phosphor.
—— when stooping: Calc. carb., Bryon., Sepia, Spigel.

Vertigo with an empty stomach: Phosphor., Iodum., Calc. carb., China.
—— after eating: Calc. carb., Nux vom., Natr. mur., Phosphor., Lycop., Sepia.
—— after sleeping: Phosphor., Sepia, Nux vom.
—— in the fresh air: Nux vom., Silic., Coccul.
—— in the room: Silic., Agar., Arsen., Pulsat.
—— before the menses: Calc. carb., Pulsat., Sepia, Ver. alb.
—— during the menses: Phosphor., Hyosc., Graphit., Lycop.
—— after the menses: Nux vom., Phosphor., Graphit.
Amelioration by motion: Rhus tox., Pulsat., Capsic., Cyclam., Lycop.
—— by rest: Nux vom., Natr. mur., Bellad., Colchic.
Revolving vertigo: Phosphor., Nux vom., Bryon., Arnica.
Stupefying vertigo: Calc. carb., Silic., Bellad., Hyosc.
Staggering vertigo: Acon., Rhus tox., Nux vom., Platina.
Vertigo with trembling and uneasiness: Phosphor., Calc. carb., Ignat., Arsen.
—— with fainting: Phosphor., Nux vom., Natr. mur., Arsen., China.
—— with vomiting: Nux vom., Ipec., Ver. alb., Arsen., Pulsat.
Vertigo with inclination of falling forward: Phosph. ac., Graphit., Cicut. vir., Spigel.
—— with inclination of falling backward: Rhus tox., Nux vom., Bryon., China.
—— with inclination of falling sideways: Silic., Sulphur, Ipec.

Sea-sickness.—Even here we have to study the peculiarities of the single case.

Apomorphia, nausea without any apparent signs of gastricism. Dr. Skinner gave it with success.

Borax, perhaps never given, should be tried on account of its symptoms of aggravation on downward motion.

Calc. carb. may be indicated by its aggravation on upward motion.

Coccul. is perhaps the oldest remedy recommended in sea-sickness. Nausea with tendency to faint.

Colchic., excessive sensitiveness of smell against cooking.

Nux vom., headache; gastric symptoms; constipation.

Opium, great sleepiness; constipation.

Sepia, headache; desire for sour and refreshing things.

Petrol. has proved beneficial very often.

Pulsat., drowsy, thirstless; dizzy, especially on getting up from a seat; feels better on deck.

Some persons are greatly benefited by applying a piece of blotting paper, soaked in rum or brandy, upon the pit of the stomach.

In all cases it will be well to exert the will-power in order to gain command over the body against the motions of the vessel and to harmonize its motions with that of the ship.

Sleep, Stupor, Insomnia.

The fluids and tissues of the body are constantly undergoing change by the ceaseless activity of its various parts as an organized entity. Every voluntary or involuntary motion of the muscles, the action of the different glands, the working of the entire nervous system is attended with a continuous retrograde metamorphosis of constituent elements. All this must, at certain periods, inevitably result in exhaustion. The consequent necessity for reparation of the lost elements manifests itself in active assimilation of new material from what has been prepared by digestion; in other words the conscious activity of the cerebro-spinal system gives way to the unconscious activity of the sympathetic system—we fall asleep. Sleep, therefore, in its real nature consists in the predominant activity of the sympathetic system over that of the cerebro-spinal. For this reason, we find during sleep, as Durham in his "Physiology of Sleep" observes, "a notable increase of blood in the stomach and other abdominal viscera," which is drawn there by the increased action of the assimilating system; for wherever there is greater activity there is a greater afflux of blood. But this heightened action of the assimilating system has also another effect; it subdues all other activities. *Mentally* we become *unconscious*, partly from actual want of exciting elements which have been consumed during waking life, and partly from the withdrawal of exciting elements by the increased action of the assimilating organs; we find, therefore, physiologically corresponding, *less blood* in the brain, as has been demonstrated by Durham, Hammond and others. *Bodily* our voluntary muscles subside into inactivity and the amount of work done by the excretory organs is equally lessened; we find,

physiologically corresponding, respiration as well as circulation decidedly slower than during waking life.

All this is the necessary consequence of the increased action of the assimilating system. For it is impossible that all our activities could be excited at the same time in an equal degree. We see this clearly portrayed in the action of our mental life. Even during our waking periods conscious excitement belongs only to a very small portion of what we mentally possess; the bulk of our possessions lies dormant. Consciousness shifts from one mental modification to another, sometimes swiftly even tumultuously; or only slowly or evenly, but always involving only parts and portions of our entire mental acquisitions. The same holds good when we consider man mentally and physically as one whole. During the predominant activity of his cerebro-spinal system, the sympathetic system is in comparative rest, while the latter subdues the former, when the primary forces have been consumed and a new supply has to be prepared by its action. How great the force is with which the assimilating process assumes its ruling, we all have repeatedly experienced; the eyelids droop, the sounds grow indistinct and irresistably we fall asleep. The restitution of vital forces *must* be done and during that process all other activities *must* partially or totally cease. It is erroneous, therefore, to say that "the state of comparative repose which attends upon this condition (sleep) *allows* the balance to be restored" (Hammond), since in fact this restitution or more definitely expressed, the assimilating process does not allow the accustomed action of the mind, brain and other organs. *Unconsciousness*, partial or total, is a necessary *concomitant* of sleep, not its essential nature, just as the comparative repose of the voluntary muscle and excretory organs is the natural consequence of the heightened activity of the assimilating system. As long as either reigns, the other must be silent. And as an increased activity always causes an increased circulation and vice versa, it is erroneous to say that the loss of consciousness, total or partial, during sleep be due to the lessened circulation of blood within the brain, since in fact the comparative inability of the mind (unconsciousness) and the consequent inactivity of the brain as its condition, is the cause of this lessened circulation. Being not needed in the brain and all other organs which are under the control of the cerebro-spinal system, the circulation slackens here and increases where a heightened activity calls for it, i. e., in the assimilating system.

Playfair thinks that sleep is due to "a diminished supply of oxygen to the brain" (*Northern Journal of Medicine*, No. 1, 1844, p. 34; see Hammond on sleep, p. 30); and Preyor holds the opinion "that the oxygen during sleep is used up in a different manner than in the waking state. During exercise of the brain, as well as of the muscles, a kind of peculiar material, so-called "material from weariness" forms, which accumulates in quantities corresponding to the intensity of the activity, is very oxidable, and which lays hold of the oxygen during sleep, and thus becomes oxidized" (*Wiener Freie Presse*, Sept., 1876; *North. Am. Journal*, Febr., '77, p. 349). These views are just as valuable and correct as the idea of a diminished circulation of blood in the brain during sleep. For oxygen is certainly a necessary constituent to healthy blood and of the consequent activity of any kind. But when, according to Pettenkofer's experiments, the system accumulates during sleep much more oxygen than during its waking state, one cannot clearly see why an increasing acquisition of oxygen should just induce sleep, which is supposed to be due to a diminished supply of oxygen. Here as elsewhere again a *condition* is taken for the *cause*. The cause lies in the hightened action of the assimilating system, which again replenishes what during the activity of the cerebro-spinal is needed and consumed.

It will not do, to oppose this truth by reminding of the fact that an artificial interruption or suppression of the circulation within the cranium by compressing the carotids will cause unconsciousness; for we have never stated that healthful circulation of the blood be not required for the functional activity of the brain, nor that a healthy brain be not a necessary condition for the legitimate exercise of the mind. A certain amount of healthy blood within the brain *is* a necessary condition for its successful operation, but is a condition the *cause?* Still, if it might be allowed to say that a certain amount of opium, chloral, carbonic oxide, etc., *causes* stupor (unconsciousness), why should we not likewise consider the lessened circulation of blood during sleep as the cause of its attending unconsciousness? Because thereby we would not at all explain the lessened afflux of blood to the brain, and the question would still remain: What lessens the circulation in the brain during sleep? And we have stated the cause: it is the reduced activity of the brain in consequence of the hightened activity of the assimilating system. Wave-like

do these activities interchange, like ebb and flood, and where the one is in the ascendency, the other has to go down. The necessity of each regulates their periodicity. In the new-born child the vegetative sphere is yet so predominant, that in the first six weeks, if well, the child sleeps all the time with but short interruptions. Gradually, however, as its mentality widens, sleep becomes shorter, until it is reduced to a certain space of time necessary for the assimilation of new forces required for action of the cerebro-spinal system. Worriment of mind, great passions, etc., may banish sleep for a considerable length of time, that is, may subdue by its strength the activity of the vegetative system, but not without an adaquate cost to the whole organism, and yet finally even the strongest passion will have to yield to the still greater power of recuperating necessity.

Stupor, Coma, or whatever a state of unconsciousness, resembling deep sleep, may be called, *is no sleep*. It is caused by a violent interference with the conditions necessary for a normal action of the brain. Such CAUSES are various remedial agents, like opium, chloral, carbonic oxide, alcohol and others, which vitiate the blood; or different blood-poisoning diseases, like typhus, scarlatina, uremia and others; or hæmorrhage within the brain (apoplexy), which compresses the organ so as to make it unfit for a successful operation of the mind. Sleep and stupor differ, therefore, in this that the first is the natural consequence of the predominating activity of the assimilating system, while the latter is induced by a direct violence to the brain; there health, here disease is represented. The *approach* of sleep is favored by everything which either depresses mental life (cuts off the supply of exciting elements, especially fatiguing mental toil, and also listless reverie, want of *external* excitement), or which gives increased impetus to the bodily act of *assimilation*, such as superabundance of food, hot drinks, great bodily exhaustion, loss of blood, etc. Excessive *cold* does not produce *sleep*, but *stupor*, like excessive *heat*. In both cases the effect is congestion towards the brain, which renders this organ unfit for the successful exercise of mental action.

If on the contrary by excessive *mental strain*, as we find it not unfrequently with business men, too eager students, or after great trials, sorrow, anxiety, night-watching, etc.—the assimilating process has been unduly restricted for a greater length of time—**Sleeplessness (Insomnia)** is the natural result. *Mental* and conse-

quently *cerebral* activity so overbalances the process of appropriation, that the assimilating system at last becomes weakened, and losing its connative force, leaves the work undone which it is destined to do. This necessarily must prove destructive to the entire organism, and cause *bodily* an overwrought condition of the brain (relaxed and enlarged blood-vessels), while the *mental* activities gradually confine themselves to fixed ideas or uncontrollable combinations, until at last but an insane wreck of a formerly well-balanced constitution is left.

But there are also a number of Bodily Causes which induce sleeplessness; they all may be summed up under the one head: *Whatever interferes with the process of assimilation.* The number of such disorders is large, and their pathological specification will appear in the course of this work. In general most fevers have this effect, and among the daily used beverages, coffee and tea are the most prominent, as they retard according to physiological experiments, the process of waste and repair in the tissues.

THERAPEUTIC HINTS.—It is one of the most favorable signs when soon after the administration of a remedy, a natural sleep ensues. By no means ought such sleep to be interrupted. While it lasts, nature replenishes and rebuilds what has been spent and wasted. It does more good than a repetition of medicine, by which indeed the first beneficial effect might be destroyed; the remedy which induces it will quietly work on for the benefit of the patient; it is *the* remedy. This rule applies only to natural sleep. In case of **Drowsiness, Stupor,** etc., medicine must be repeated just *because* of this state, and it may be one of the leading symptoms for the selection of the remedy.

Apis, sopor with piercing shrieks; meningitis.

Bellad., heavy sleep with frequent starting, or snoring, screaming or singing; with eyes half open; always attended with fever; skin may be dry, but is mostly perspiring; face may be flushed, but is often pale. Many febrile diseases.

Bryon., drowsy sleep with starting and crying; with chewing and swallowing. Head hot; children cry when taken up or being moved. Meningeal irritation.

Chamom., starting, moaning, screaming, talking, weeping during sleep; mouth open; face occasionally distorted by convulsive motions; head perspires a great deal. Dentition.

Laches., great drowsiness attending many complaints; feels bad

or worse after sleep; starts when at the point of falling asleep and moans during sleep.

Lycop., very sleepy during day with unsuccessful yawning; starting and jerking of the limbs during sleep; sudden loud screams during sleep; waking with a peevish mood, scolding, screaming, ugly demeanor, nervous irritation. Fevers.

Nux mosch., unconquerable drowsiness; falls asleep whenever sitting down to rest. Long spells of somnolence. Tongue often dry without any thirst. In company with many complaints.

Opium, stupor; snoring; eyes half closed; mouth open.

Phosph. ac., being roused, answers correctly but goes to sleep again at once; typhoid.

Pulsat., very sleepy with various symptoms of head, stomach and bowels.

Rhus tox., drowsy sleep with murmuring and talking; typhoid.

Insomnia.

Acon., fever-heat, dry skin; tossing about; lamenting; great pain with inflammatory processes in teeth, chest, bowels, during menstrual period; after fright, fever.

Bellad., drowsy and yet unable to sleep; anguish; visions; large pupils; congestion towards the head; after morphium.

China, ideas crowd upon the mind; after loss of blood and weakening diseases.

Coffea, nervous excitement; wide awake; not the slightest inclination to sleep; after great mental strain, joy, night-watching, acute diseases; dental irritation.

Hyosc., drowsy or sleepless; wild expression; delirious; after chloroform.

Ignat., after grief and depressing emotions; after overstraining the mind by racking business.

Moschus, hysterical sleeplessness; after chloral.

Nux vom., after mental strain till late at night; abuse of coffee, wine, liquor, opium, tobacco.

Opium, excessive wakefulness, or drowsiness with inability to go to sleep.

Pulsat., indigestion; after quinine, ferrum and strychnine, tea, chloral.

Sulphur, very important with many and different symptoms; sleepy in daytime; sleepless at night.

These are the main remedies, of which one or the other may be indicated when drowsiness or sleeplessness is one of the leading symptoms of the case. However, there are a number of cases where these symptoms, although prominent and distressing, may entirely lose their rank as guiding symptoms, and none of them indeed would prove satisfactory. Then we have to choose our remedy irrespectively of these symptoms, which will disappear as soon as the main string is touched. For such cases, of course, special therapeutic hints cannot be given *a priori*.

Meningitis tuberculosa, Hydrocephalus acutus,

Is in its nature an inflammatory affection of the pia mater, dependent upon the development of miliary tubercles. In this it differs from all other meningeal affections.

The miliary granulations are always found in the immediate neighborhood of vessels, sometimes especially of those at the convexity, sometimes of those at the base; frequently at the arteries given off from the circle of Willis; they may be spread over large surfaces, or they may be confined to only particular portions of the pia. Their number likewise varies as their distribution, and so do their stages of development; they grow in crops. The pia shows frequently, especially at the base, yellowish cloudy patches along the vessels and swelling of its tissues; the ventricles are dilated and contain hydrocephalic effusion. The quantity of this effusion however varies greatly, and in many cases is entirely absent. The brain in some cases shows white softening, either of only a portion of the fornix and the corpus callosum, or of larger portions of its tissue lying upwards and contiguous to these parts. In other cases this softening is entirely wanting. The cortex and neighboring white substance is in many cases anæmic and of a dry condition, most probably a result from the pressure of the hydrocephalic effusion within the ventricles. Miliary tubercles are found almost in all other organs of the body. It seems then, that scrofulosis as the main spring of tuberculosis, is also the main cause of this disease. May it be latent or apparently it always has a tendency to bring inflammatory exudations to a cheesy degeneration, and when present, irritation of almost any kind: whooping-cough, pneumonia, measles, and other eruptive diseases, or bronchial or intestinal catarrhs, dentition, colds, traumatic lesions of the bones, or periosteum of

the joints, suppressed eruptions of the head, may lead to that same end.

The sex attacked most frequently is that of the males; the age that between one and six years; from seven to ten years we find it less often, still less from ten to sixteen, and rarely afterwards.

The SYMPTOMS may develop slowly or rapidly. It seems that a crop of tubercles may be endured without causing marked disturbances; it is only when by some exciting cause an irritation is set up that the disease develops. The commencement may manifest itself in a mere indisposition, a change of mood, with frequent short naps full of dreams and starting; loss of appetite; irregularities of the bowels; febrile conditions towards evening, headache and giddiness. This undefined state may last a week and longer. Where there is already a developed pulmonary tuberculosis, the superadded meningitis may not be suspected until suddenly facial paralysis, loss of consciousness and vomiting set in.

As the inflammation progresses, we find headache; vertigo; great sensitiveness to light and noise; vomiting of anything taken, or especially when being moved; coming at intervals and disappearing after some time; constipation usually, but diarrhœa sometimes to the end. If partial or general convulsions set in, we have: tremor of the eyeballs; squinting; distortions of the face; stiffness of the muscles of the nape of the neck and back; retraction of the abdominal muscles, so that the belly looks like a tray or boat. There may also be paralysis of the face; paralysis of the eyelids; one pupil may be larger than the other. The fever rises with evening exacerbations up to 102.2° or 103° F. The skin is in some cases easily reddened by slight pressure or scratching. And as the internal pressure in consequence of exudation increases, the mind becomes clouded; the patient is drowsy, even comatose. We occasionally hear a peculiar piercing shriek which, if heard once, is scarcely ever forgotten. Convulsive movements become more frequent, such as distortions of the face; squinting; chewing; winking the lids; grinding of the teeth. Paralysis of the one or the other extremity also sets in, while the other may still keep up convulsive motions; there may be paraplegia; there may be paralysis of the tongue and deglutory muscles. The pulse at this stage falls down to sixty and lower, but is easily excited to a hundred and over by any exertion; the temperature remains the same or

sinks to about 100° F., although the pulse may have risen from any exertion to 120 or 140. Now the fontanel in children commences to bulge; the coma increases; convulsions and paralysis continues; the pulse rises again to 120 or 140; the respiration is irregular; sometimes the breathing seems to cease altogether, followed by a deep, long, sighing respiration. The face frequently changes color, now pale, and again red, and sometimes one side is pale and the other red. Or red spots appear on the face, coming and going. The blood-vessels of the eyes become injected, especially those of the inner canthi. This condition of things may last several days. When, however, the skin gets dripping with perspiration; when the abdomen becomes bloated; when stool and urine pass off involuntarily; when the anterior fontanelle suddenly sinks in, and we hear the ominous rattling in the chest, then the scene will be closed within a few hours.

The Prognosis is bad. Is the disease always fatal? Because there are no infallible means to distinguish during life between it and simple meningitis, those cases which have recovered and were claimed to be tubercular meningitis are simply set down as errors in the diagnosis; the real proof—post-mortem—is wanting, and therefore, as all cases which came under the hands of these physicians, the post-mortem proved their diagnosis correct, they concluded that all the other cases must likewise be fatal. Against this conclusion I allow myself modestly to protest. Might not a different treatment prevent post-mortem examinations? And are all tubercular affections necessarily fatal? I have lost cases of tubercular meningitis, to be sure, but I do believe that I also as well as others have cured some of them. The prognosis is bad, that is true. I shall defer therapeutic hints until I have spoken of other forms of meningitis.

Leptomeningitis Infantum; Hydrocephalus Acutus sine Tuberculis; Simple Meningitis.

Like tubercular meningitis this affection is considered an inflammatory process of the pia, although on post-mortem no inflammatory signs, not even traces of arterial hyperæmia are found. The pia is unchanged; it contains a moderate quantity of blood or is anæmic. The cortex and white substance are compressed, dry and firm; the ventricles are usually dilated symmetrically from hydrocephalic effusion; the softening of the

surrounding brain-tissue is less extensive than in tubercular meningitis. Only the plexus chorioidei shows signs of greater hyperæmia than the superficial portions of the pia. No exudation at the base. The question then, as to its inflammatory or hyperæmic nature, cannot be answered by anatomical evidence post-mortem.

As exciting causes the following are mentioned: dentition; eruptive fevers; acute pulmonary affections; concussions of the brain. The disease belongs decidedly to the age of childhood, from one to five years.

Its Symptoms correspond so closely to those of tubercular meningitis, that there is none to enable us to distinguish positively between the two, unless we take the general outspoken tendency to scrofula, if it is outspoken, or the hereditary disposition in that direction as a basis for our judgment. In many cases, of course, the symptoms vary, but the general type remains the same. Usually there are less premonitory warnings; sometimes the inability to swallow sets in at an early stage; the skin of the body is dry, while the head often perspires profusely; facial paralysis and paralysis of the extremities are less frequent than in tubercular meningitis, yet they do occur. For further particulars compare the foregoing.

The Prognosis is less fatal than that of tubercular meningitis.

Simple Meningitis of the Base.

Without tuberculous infiltration this inflammatory process causes in some cases the formation of dense, hard stripes of connective tissue, or in other more acute cases, a fibro-purulent infiltration in the tissue of the pia at the base of the brain; where hydrocephalus is present it is generally very severe. There is nothing known of predisposing causes; the victims are strong persons, between sixteen and thirty years of age; its duration is from seventeen to sixty-four days.

Symptoms.—Usually commencing with a chill or chilliness, which is followed by heat, sweat, thirst, entire loss of appetite and total unfitness for work, its main and most distressing symptom is a persistent headache, all over the head; at times more especially in the occiput. The fever-heat is paroxysmal, the temperature rising in an irregular manner to 104° F. and above, to fall down again in the morning or forenoon with a sudden leap to the normal point.

In other cases the fever continues throughout the disease, while in others still, the temperature shows periods of remarkable low even subnormal grades. There is a similar irregularity in the march of all other symptoms. Periods of entire consciousness alternate with mild or wild delirious attacks; one paralysis may disappear or give way to another; contractions and spasms may disappear for hours and then reappear again; altogether the motor symptoms make their appearance only at a very advanced period; and in some cases they are entirely absent. Death follows during coma.

These peculiarities distinguish simple basal meningitis almost from any other disease. Its sudden beginning in healthy individuals in the prime of life without any tuberculous antecedents; its long duration without any marked changes except those stated above; the late occurrence of paralyses; the rareness of spasmodic symptoms; the persistent headache—all taken together make a peculiar type. Typhoid has a different record of temperature and almost always enlargement of the spleen; cerebro-spinal meningitis is an epidemic disease and besides has no such long-continued clearness of the sensorium; abscess of the brain grows only upon abnormal conditions of the body (purulent and ichorous processes, affections of the bones, purulent affections of the lungs), and has no such characteristic march throughout. Tubercular meningitis may sometimes have a similar protracted course; but here the tubercular diathesis decides.

The Prognosis is not favorable, but cured cases are recorded.

There are still other forms of meningitis, which I shall briefly mention.

Meningitis of the Convexity

May come on spontaneously, that is without any *known* cause, or may be due to inflammatory processes in neighboring tissues, such as inflammation of the skull bones, caries of the inner ear, puriform softening of a thrombus in the sinus, panophthalmitis, erysipelas capitis, carbuncles of face and neck, old intra-cerebral affections.

Metastic Meningitis

Must be considered as a terminal complication of some acute disease, of some suppurative processes at a distance. Such are

croupous pneumonia with fungoid vegetations; cheesy deposits in the lungs; ulcerative endocarditis; pyæmia; acute rheumatism; dysentery; diphtheritis; measles; scarlatina; typhoid fever; Bright's disease.

Traumatic Meningitis

Is due either to concussion of the brain or an injury of only the soft parts of the skull, or a perforating injury, or a necrosis of the skull bones after such injury, or the breaking of an abscess of the brain.

THERAPEUTIC HINTS.—As a general rule the pregnant woman ought to be under the watchful eye of her physician during that whole period. She may be relieved just during that time of many chronic troubles, better than at any other time and her offspring saved of as many serious afflictions. But where a mother has lost already one or more children from hydrocephalus, Grauvogl's advice to administer to such a mother during another pregnancy **Sulphur** and **Calc. phosph.** at suitable intervals, ought never to be forgotten. Even after the birth of a child with suspicious hereditary proclivities, we may be able to ward off an acute outbreak of meningeal inflammation by one or the other of the following remedies:

Baryta carb., children who do not grow, but pine away, with swelling of glandular structures.

Calc. carb., fat babies with large heads, wide open fontanels, which are often covered with dirty or scurfy skin; fair complexion; they are lively, precocious; their head sweats profusely during sleep, especially on the occiput; stomach and bowels are large, sensitive to pressure; bowels inclined to be loose; feet damp and cool; dentition slow and troublesome.

Calc. phosph., flabby, shrunken, emaciated children; skull thin and soft, with fontanels wide open; will not stand any more; do not learn to walk; want to nurse all the time; great desire for salt meats and potatoes; after eating and drinking, bellyache; retarded dentition with cold tumors, emaciation and loose, green and at times slimy stools.

Lycop., children sleep apparently soundly, but scream out suddenly in sleep, stare about and cannot easily be pacified.

Silic., rickety children; sweat much about the head, especially

forehead and face; claw their mouth during dentition; are prone to abscesses, glandular swellings and a fetid sweat of the feet.

Sulphur, children who do not like to be washed; have pimples, boils and other eruptions on head, face and everywhere; pick at nose; have red lips; crave sour things; feel faint in the forenoon; may have diarrhœa early in the morning; sleep restless; start when falling asleep; cry out during sleep; or murmur, moan and whine, or snore; their feet are cold in the morning and hot in the evening; they run about, but do not like to stand; sit hunched and walk stooping.

Thuja, children of sycotic and syphilitic taint; they are rather thin than fat, are prone to eruptions which, on healing, leave purple spots; their teeth soon turn black and decay at the gums; the salivary glands swell; there is sometimes thrush or ranula; offensive discharge from the ears; soreness of penis or vulva and about the buttocks; frequently recurring morning diarrhœa; pain in the left iliac region; fetid foot-sweats; often the uncovered parts sweat, while the covered parts are dry and hot. Their parents, one or both, have a greasy skin, and warts and moles, and crave salt, and the little one will by and by show these hereditary symptoms.—(*T. P. Scales.*)

When the real meningeal inflammation has set in, we shall have to choose between the following remedies:

Acon., in the first state of irritation and in the traumatic form, especially where there is fever-heat, dryness of the skin, restlessness and impatience. The pulse is full and bounding or thready; the breath is short.

Apis, convulsions; eyes, ears and skin lose their sensitiveness; when water is put into the mouth, there is no effort at swallowing; sopor, interrupted by piercing shrieks; bending back and rolling of the head; muscles of neck tense; profuse, sticky sweat on the head, of a musk-like odor; inability to hold up the head; eyes sunken, half shut; on opening eyelids no reaction; squinting; dilated pupils; hearing gone; occasional red streaks or crimson spots on the face or different parts of the body; face pale, of a milky blue; grating of teeth; scanty, but frequent emissions of a dark and sometimes of a milky urine, or suppression of urine; no stool, or thin, scanty stool, passed but seldom and unconsciously; trembling of the limbs; twitching or moving of the limbs of one side and paralysis of the other; irregular, slow pulse, or very quick and weak.

Apoc. cann., sutures opened; forehead projecting; sight of one eye totally lost, the other slightly sensible; stupor; constant involuntary motion of one leg and arm; urine suppressed.

Arg. nitr., according to Grauvogl in *the last stage*. He gives it in the 6th dilution every two hours, and at the same time *Calc. phosph.*, 2d trit., night and morning.

Arnica, after a fall causing either concussion, a bruise or a perforating wound; also where there is suppuration in consequence. There are cases where the meningeal irritation does not show until several weeks after the injury. For such cases Arnica is specific.

Art. vulg., convulsions of right and paralysis of left side; body cold all over; sopor, and yet drinking and swallowing water eagerly; face pale and oldish looking; involuntary stools, greenish and thin.

Bellad., vertigo on sitting up, with nausea or vomiting; redness and heat of the face, or alternate redness and paleness; sparkling, shining eyes, with dilated pupils; rolling and squinting of the eyes; blindness; throbbing of the carotid arteries; drowsiness, yet inability to sleep; or drowsy, restless sleep, with frequent startings; trembling hastiness in taking hold of things and sitting up; spasms affecting eyes and face, or spasms of one side and paralysis of the other; involuntary discharge of urine. During dentition; after taking cold by exposure to a cold north wind.

Bryon., leaning head against something; putting hand to the head; uncertain, tottering gait; tired; sudden change of disposition; dizziness; fall often and strike against things; sudden change of color in the face; loss of appetite; restless sleep—as premonitory signs. Later: head bent backwards; very dark red face, "crimson red;" dry lips; dry, brownish tongue; hasty, impetuous drinking and swallowing; constipation; suppressed or painful urination with much straining; dry heat all over and especially of the head; drowsy sleep; chewing and swallowing during sleep; cries when being taken up or moved.

Canthar. may be a rival to Apis. Is important in inflammations of serous membranes, why not in meningitis? There are a number of symptoms which hint to it. Compare Condensed Materia Medica.

Cina, either real or simulating meningitis with so-called worm symptoms.

Cicuta, rolling of the head from side to side, or boring of the

occiput into the cushions; head hot; eyes closed; on lifting the lids, eyes stare upwards; great agitation; child grasps at one's clothing in a frightened manner; jerking of limbs; convulsions with screaming afterwards.

Cuprum, hot head; deep sopor with twitching and jerking of the limbs; coldness of the hands, and a bluish appearance of the fingers. "During scarlet fever without eruption; afraid of and shrinking away from every one who approaches him; afraid of falling; clinging tightly to the nurse; won't stay in bed but in the lap; conscious, knows people." Tongue darting forth and back with great rapidity, like a snake's. After catarrhal or exanthematic fevers; during difficult dentition.

Digit., sopor; unconsciousness; pupils dilated, insensible to light; blindness; one-half of face convulsed; pulse very slow, often hard, with a corresponding powerful stroke of the heart, sometimes intermittent and small; breathing heavy, slow and deep; sleep with frequent startings, and dreams of falling; general convulsions.

Gelsem., the child wants to be let alone, wants to lie still; head hot, hands and feet cool; face red; eyes dull; tongue coated yellowish white; no thirst; breath hot, sometimes offensive; sleepy and drowsy, sometimes comatose; during sleep, convulsive motions; creeps and flushes run up the back; more or less moisture of the skin, especially on palms of hands and in the axillæ; pulse depressed at first, later frequent and soft. During summer or warm weather with southerly or southeasterly wind.

Glonoin., headache; every pulse is felt, as if the head should burst; stupefaction; sunken eyes; under the eyes a bluish pallor; red eyes with photophobia; optical illusions; lightening; black spots before the eyes; blindness; in the ears pain, fulness, pulsation, ringing, deafness; face is pale in spite of high fever, or red and hot; temporal arteries pulsate violently; heart beats strong and laborious; pulse mostly accelerated, often changing suddenly to slow and back again; nausea, vomiting with the headache; sudden spasms.

Gratiola, has been given as extract with good result in a case where there was low respiration; occasional sighing; gnashing of teeth; eyes shut; pupils enlarged; slow pulse; unconscious discharge of fæces and urine.

Helleb., great irritability, getting angry easily; vertigo as if drunk; eyes staring or rolled up, lids half closed; squinting;

forehead drawn in folds and covered with cold perspiration; face pale and puffy; frequent rubbing of the nose; nostrils dry and dirty; chewing motions with the mouth; greedily swallows cold water; wants food occasionally but rejects it when offered; rolls the tongue from side to side; lower jaw sinks; vomits green mucus; passes dark urine with a sediment like coffee-grounds. Breathing sometimes quick, sometimes slow and deep; sighing; boring back of the head; soporous sleep with screaming and starting; automatic motions of one arm and one leg; convulsive movements of muscles and jerking; exudation.

Kali hydr., is the remedy of Kafka, for scrofulous and tuberculous subjects. The disease develops gradually, and this remedy ought to be given at an early stage, although even later with symptoms of exudation it has been found to act favorably.

Laches., is often indicated after *Lycop.*, especially when there is difficulty of swallowing; gagging with throwing up of wind; hot abdomen.

Lycop., is one of the most important remedies in tubercular meningitis. Generally speaking it corresponds to scrofulosis and tuberculosis, cheesy degeneration and dropsical effusion. Special indications: drowsiness, loud screams during sleep; sleep with half open eyes, throwing the head from side to side with moaning; bad humor after sleep; comatose state; great emaciation; pale face; flushes of heat in the face; spasmodic twitching of the face; stiffness of the neck; constipation. Also in complications with eruptive fevers and pneumonia.

Merc. sol., drowsy, sleepiness with restless throwing about and occasional waking with a shrill cry which is followed again by dozing off. The sensitiveness of the eyes to light is diminished; squinting. Mercury is considered as being capable of exciting the process of absorption.

Opium, soporous condition with half open eyes; snoring; iris insensible to light; congested face; suppressed urine.

Spongia, according to Hering, of great importance on account of its relationship to scrofulosis and tuberculosis. Guiding symptoms: congestion of blood to the head with pressing, knocking and pulsating in the forehead; redness of face with anxious mien; better when lying in a horizontal position; heat in the head; bending the head backwards with tension in the neck. Eyes staring, lids wide open; double sight; face pale and cold with the heat; alternately red and pale. Twitching of the muscles

with the fever; frequent waking with a start; tossing about; stupid slumber.

Stramon., head is thrust forward instead of back; conjunctiva injected; pupils contracted; desire for light, or bright light and glistening things cause spasms; calls for his parents who are present but does not know them; violent delirium; stammering; great dryness of the mouth; dysphagia; urine suppressed; trembling and convulsive movements of the limbs; striking with hands and feet; frequent torsions of the trunk; screaming; suppressed miliary eruptions.

Sulphur, heaviness of the head; it sinks backwards; sweat on head of musk-like smell; frequent change of color in the face; pale, distorted features; sour smell from the mouth; turbid urine with red sediment; suppressed eruption on head, behind the ears or elsewhere. Often indicated after **Bryon.** or Helleb. See above.

Zincum, cross and crabby in the afternoon and morning; pain in forehead, better when lying; sensitive to light; dry nose; pale, waxy face; relaxed features; gagging and vomiting and yet a voracious appetite; stool retarded, omitting for days; scanty, turbid urine, as if mixed with clay; cannot keep the feet still. Heat and fever morning, evening and part of night; restless sleep before midnight, after midnight more quiet, and in the morning awakes brightly. Complication with scarlatina.

Hydrocephalus Chronicus

Develops itself, in grown persons, of acute attacks of different forms of meningitis, which may have been brought on by irritations of the brain from exposure to heat or cold; external injuries; the abuse of intoxicating drinks, or too great mental exertion. In children, even if it originates after birth, it is nevertheless identical with the affection called

Hydrocephalus Congenitus,

that form which children are born with. It is probably the consequence of an inflammatory process of the lining of the ventricles during fœtal life; perhaps it is a deficiency in the proper assimilation of calcareous substances which form the bones. Why it is, we do not know in either case. Some women have given birth to hydrocephalitic children several times in succession, without any apparent cause.

As the water collects in the ventricles while the sutures of the bones have not yet united, its constantly increasing bulk drives the bones asunder and enlarges the head to an enormous size. Or, if we take the other view, which is perhaps the more plausible of the two, we might explain it in this manner: The insufficiently-developed bones are not capable of restricting the growing brain within its proper limits; they give way here and there, and the brain gains entirely too much space within the skull. As, however, a vacuum can never exist, it is at once filled up with the general equalizing medium, *water* or *serum*. In this way the inner pressure becomes still stronger, and the still deficient bony structure becomes still less capable of restraining the increased internal pressure; it gives way again and again; and for the same reason the effusion of water must increase still more, until at length the whole cranium attains to an enormous size.

The disease can be recognized at once, although it may not have come to its full development. There is a disproportion between the size of the skull and that of the face; the fontanels are much wider than usual, and the frontal opening may be traced down into the frontal bone; and laterally, down between the parietal and frontal bones. The bones themselves feel thin under pressure of the fingers; and externally the veins appear greatly enlarged, shining through the skin.

All these external changes appear only when the collection of water is very considerable. There have been found from six to ten pounds of serum within the ventricles, which then appear enormously distended and thickened, while the substance of the brain in the neighborhood is wasting away. A small amount of serum does of course not change the external form of the cranium; neither is it changed should the effusion take place at a later period, when the sutures of the skull bones have closed; to this there are a very few recorded exceptions.

Children born with hydrocephalus fully developed, die frequently during birth or soon afterwards. Others show no signs of this malady in the first weeks; even during the whole of the first year it may be overlooked, until the *inability* of the child *to hold up its head* calls attention to it. But even then there may be no enlargement of the head visible, yet the child is slow in all its mental developments; it does not make any attempt to talk or walk; it remains uncleanly, and its actions look strangely; when in joy or fear it makes antics and straggles

with its extremities. Its eyes do not look knowingly at any object; it shows no interest for things; it appears imbecile and foolish. Saliva is constantly oozing out of the half opened mouth; it eats greedily, and often is seized with spasms.

The progress of the disease is either a steady one, going on from bad to worse, until at last general paralysis ends the scene; or it is interrupted by stationary periods, or it remains for years seemingly unaltered. It is rare, however, for such patients to live beyond the age of puberty; a few only have been observed to live to the age of twenty.

THERAPEUTIC HINTS.—The most important remedies for this affection are: Arsen., Calc. carb. and phosph., Helleb. and Sulphur.

The old school confesses that by diuretica, drastica, iodine-preparations and calomel nothing has been achieved; neither has the compression of the skull by adhesive strips, nor a repeated punction or tapping, been of use.

Hydrocephalus Senilis

Is that form of hydrocephalus which is found in old age, the second childhood of man. It seems to be developed from the following condition of things: The brain in old age is apt to shrink, which necessarily would cause an empty space within the skull. As no vacuum can exist, the would-be empty space is at once filled up with serum. The same takes place when, from some cause or other, only a portion of the brain becomes atrophied. The space which hereby is vacated is at once taken up by an exudation of fluid. Hence this sort of hydrocephalus is termed **Hydrocephalus ex vacuo.** It sometimes happens that the exudation of serum takes place so suddenly and so profusely as to cause all the symptoms of an *apoplectic stroke*, when it is called **Apoplexia serosa.**

In most cases it is impossible to make a differential diagnosis between it and **Apoplexia sanguinea**; neither have we any distinct signs by which to diagnose **Hydrocephalus senilis.**

Meningitis Cerebro-Spinalis Epidemica.—Spotted Fever.

This is an acute, diffusive inflammation of the pia of the brain and spinal cord, resulting in an exudation of purulent matter.

"It is deposited both on the convexity and at the base, especially along the course of great vessels, in the folds and depressions of the surface of the brain, in the fissure of sylvius, along the sulci, between the pons variolii and chiasma, and on the pons and cerebellum. In rare cases the whole surface of the brain is uniformly covered." In the spinal cord the exudation is found "chiefly in the lumbar, less in the cervical region, and almost exclusively on the posterior surface of the cord," owing to the tendency of any fluid to flow to the dependent parts. "The brain substance is sometimes congested with punctiform hæmorrhage and secondary development of small spots of softening; at other times, when the disease has been hyperacute or very long-continued, it is juicy or œdematous, with a smooth, level surface, and of a watery appearance on section. More rarely the substance is of a tough consistance." (Von Ziemssen.)

Although this disease may have prevailed at times in previous centuries, the first epidemic ascertained with certainty, is that in Geneva, from February to April, 1805. Since then many epidemics have been observed and in all parts of the globe, with the exception of the tropical regions proper. It is an infectious disease, but what its disease-germ consists of, is entirely unknown. It generally occurs during winter and spring, and especially when there is great moisture of the air and great variations of temperature. It selects not malarial regions, but rather sandy, dry plateaus, though malarial neighborhoods are not exempt. Childhood is most severely attacked, yet no age is spared. The disease-germ seems best to thrive where it finds a soil prepared by insufficient nourishment, damp, overcrowded, badly ventilated houses with unclean ground floors.

Symptoms.—It most always sets in suddenly, commencing with a chill, followed by fever; violent headache; vomiting; extraordinary prostration of strength and great restlessness. The headache is unusually severe, sometimes in the front, sometimes in the back part of the head; its cessation is a very favorable sign. Vomiting is especially excited by rising and rarely absent. The fever-temperature is very irregular, varying in the mean from 100.4° F. to 104° F., with very irregular variations above and below these points, often interrupted by long-continued normal temperatures, while the other symptoms continue unabated. The pulse is likewise irregular; its frequency does not always correspond to the height of the temperature, and varies

sometimes thirty to forty beats in a few hours. A slow pulse is less frequently found than in meningitis tuberculosa, and a continued rapidity is unfavorable. In severe cases there occur at the start loss of consciousness, coma or delirium, or at least somnolence, out of which the patient may be roused by being spoken to, answering correctly, but soon relapsing into the same state again. Some cases commence with convulsions, and that characteristic stiffness of the neck, which in a few hours may develop into a tonic contraction of all the extensors of the spinal column; orthotonos is frequent; opisthotonus is rarer; rarest is pleurothotonos or the unilateral contraction of the spinal erector muscles. In rare instances, however, the stiffness of the neck is entirely absent. There is great aching in all the limbs, and especially in the spine, a universal oversensitiveness of the skin; every touch and motion causes great pain. Now appear also cutaneous eruptions, herpes on the face, or on the extremities; then erythema, roseola, urticaria and petechiæ. The name of the spotted fever was suggested by those irregular, purplish ecchimosed spots from the size of a pin's head to larger patches, which appear generally on the second day of the disease upon various parts of the body, usually first on the upper eyelids, gradually extending to other parts; they do not get white under pressure. In some cases they are absent. From the third to the fifth day the tongue becomes dry and cracked, in comatose cases; in other cases it remains moist but heavily coated. There is sometimes diarrhœa, at other times constipation. In other cases the symptoms of irritation are followed by symptoms of depression; no reaction ensuing; unconsciousness is complete, stools and urine pass off involuntarily, pulse and temperature rise, convulsive movements, half-sided paresis, general convulsions, profound coma follow each other and death closes the scene. In favorable cases these symptoms of depression do not set in at all, or are not so marked nor lasting. The headache, the pains in the limbs and spine continue, but gradually grow milder and convalescence begins in from one to two weeks, though sometimes later. There are cases especial during the commencement of an epidemic, which terminate fatally in from twelve to thirty hours; and on the other hand, there are cases even during the height of an epidemic, which are so light, as to allow the patient to continue work.

As Sequelæ have been observed: "Deafness, derangements of vision, chronic hydrocephalus and chronic meningitis, with the

consequent impairment of intelligence, and lesions of motility in the form of paralysis and paresis."

The DIAGNOSIS is difficult in isolated cases and when the disease occurs in complication with other acute diseases, especially croupous pneumonia. It differs, however, from **Tuberculous meningitis** by the suddeness of its attack, the irregularity of pulse and temperature, and its peculiar eruptions; from **Typhoid** by the same pecularities. In the first days a distinction between the two may not be possible, but a few days of observation of the temperature will decide. When in complication with pneumonia, its diagnosis may remain doubtful for some time; however, the stiffness of the neck and the painfulness of the spine will lead us to suspect such complication.

Its PROGNOSIS is grave, especially in infancy and old age and in all cases where the symptoms are very violent and the state of depression continues without any apparent reaction. Each single case has to be weighed by its own peculiarities and even these doubtful cases may take a favorable turn, while others prove fatal even under careful treatment.

THERAPEUTIC HINTS.—Acon., chill; fever; restlessness; dry skin; great thirst. Still I have not seen, nor found mentioned great achievements from this remedy.

Act. rac., intense pain in the head, as though a bolt were driven from the neck to the vertex with every throb of the heart; pain at the base of the brain and up and down the whole length of the spine; stiffness of neck and back; intense pain in the eyeballs; tongue swollen, or raw and red; redness of fauces and palate; soreness and bruised feeling of the muscles generally, or sometimes confined to a circumscribed spot, and often changing location, and with a feeling as if an abscess were forming; great sensitiveness of the skin. Creeping chills in the back; profuse, sometimes cold perspiration all over; tonic and clonic spasms; delirium, like delirium tremens; sees cats and dogs, etc.

Apis, often indicated. Compare Meningitis.

Arg. nitr., recommended by Grauvogl, is undoubtedly of great importance. It has tremendous headache of all kinds; vertigo; photophobia; clouds before the eyes; double vision; eyeballs floating in mucus; deafness; pale and emaciated face; lips and nails blue; white coated tongue, or dry and hard tongue, like bark and black; black coated teeth; cannot talk; wants to drink

sweet things, sugar water, the juice of boiled, sweet prunes; stools and urine unconsciously; oppressed breathing; wants to be covered all the time and yet wants fresh air, the windows open; cannot move himself. Soporous sleep, with constant murmuring; it is difficult to rouse him, and when half roused, the eyes, scarcely opened, fall shut again. The whole left side is weak. Emaciation; constant trembling of hands; jerking of single muscles.

Arnica, sopor; cringes when touched anywhere, even during unconsciousness; great soreness all over; diuresis; during stage of great weakness.

Arsen., great restlessness and prostration; arsenic thirst; intermittent type.

Bellad., often indicated by the violent headache, drowsy state, and delirium; dilated pupils; double sight.

Bryon., bursting headache; stiffness of neck; great pain in joints and limbs, all worse from motion.

Camphora, cold, deadly pale or blue, almost pulseless from first shock of chill without reaction.

Cann. ind., vertigo on rising with stunning pain in the back part of the head; fixed gaze; dilated pupils; sensitive to sounds; cold face, with drowsy and stupid look; anguish in the chest with great oppression; pain across shoulders and spine; paralysis of lower extremities and the right arm; convulsions; emprosthotonus, with loss of consciousness; collapse; stupor; pale, clammy and insensible skin; feeble, irregular pulse. (Hale.)

Chin. sulph., violent throbbing headache; vertigo; heat in face; involuntary closing of the eyelids from sheer prostration; intermittent type.

Cicuta, insensibility; double sight; dilated pupils; staring look; jerking of eyeballs, muscles of face, arms and hands; perfect deafness; dumb for several days; ashy paleness of face; head retracted; rigid spine; dysphagia; first diarrhœa then constipation; rapid pulse; insensibility to touch and pinching; paralysis all over.

Crotal., horrid headache; delirium with open eyes; pain in all the limbs; ecchymosed spots everywhere; convulsions and paparalysis.

Gelsem., feeling as of a tape around the head; great drowsiness; itching of head, face and neck; loss of vision and speech; nausea; pulse feeble; respiration labored and feeble; trembling and complete loss of muscular power; sweating relieves.

Glonoin., violent throbbing headache with sense of expansion; blindness with faintness and nausea; pale face; pain through the whole length of spine.

Hyosc., delirium, muttering or wild; double sight; convulsions.

Lycop., sopor; sinking of lower jaw; fan-like motion of nostrils; feeling of tension in chest and abdomen as of a hoop; don't want to be alone; jerkings of limbs and body. Compare under Meningitis.

Opium, stupor; spasms; drawing the body backwards and rolling from side to side; deep, slow breathing; very quick, or very slow pulse. After violent emotions, fear, grief, fright, which acted like a blow, stunning the whole nervous system.

Rhus tox., stupefaction and vertigo; various eruptions, eczema on face; nosebleed; dry cough, perhaps bloody sputa; great aching pains all over with restlessness.

Ver. vir., during first stage with coldness of surface; loss of consciousness, labored, slow and irregular pulse. Later: trembling as if frightened and on the verge of spasms; convulsions; retraction of head; rolling of head; rolling up of eyes; opisthotonos; very frequent and feeble pulse.

Protracted recovery hints to: Calc. carb., Carb. veg., Psorin., Silic., Sulphur, Zincum.

Pachymeningitis, Inflammation of the Dura Mater.

The dura consisting of a periosteal (external) and an inner lamella, pathology recognizes:

1. **Pachymeningitis externa**, which may be caused by external injuries; separating the membrane from the inner surface of the skull, or bruising and tearing it; or by transmission of inflammation from neighboring tissues. It always is confined to circumscribed spots, and seldom recognizable as a separate affection, because of the ease with which the inflammatory process may spread to the inner lamella and pia. Pachymeningitis of old age is frequently detected post-mortem, without any marked symptoms during life.

2. **Pachymeningitis interna** may be a mere continuation of inflammatous and suppurative processes of the outer layer. As such it is as little recognizable during life as the former.

3. **Pachymeningitis interna Hæmorrhagica or Hæmatoma durae matris** is in fact not an inflammation, but an extravasation of

blood, which undergoes the usual changes of a coagulum, and developing from itself a new formation. It is found either on the surface of both hemispheres or only on one, and principally attacks persons after 30 years of age and upwards, although cases under that age are likewise recorded.

The Symptoms must naturally vary according to the quantity of extravasation, its location on one or both hemispheres or its spreading from one to the other, and its repetition. A sudden and increasing compression is indicated by headache, drowsiness, loss of consciousness, fever, slow, sometimes irregular and towards the end mostly very frequent pulse. The contraction of the pupils, the absence of strabismus and ptosis indicate that the convexity is the seat of the lesion; the simple rigidity, paresis or actual paralysis of the muscles, the disturbances of sensation, numbness, formication, when present on one side only or on both, or progressing from one side to the other, indicate its location on the opposite hemisphere or over both, or its spreading from one to the other. Coma, disturbances of respiration, slowness of pulse, inability to swallow, cessation of reflex movements of the pupils, indicate a compression of the whole brain, while convulsions of one side and then on the other, afterwards paresis of one side with paresis of the facial or hypoglossus of the same side, then paresis of the other side show irritation of the motor centres of the surface of the brain. The intervals between different attacks of extravasation are characterized by headache, diminution of intelligence, loss of memory, drowsiness, partial paralysis, disturbance of speech, sudden mental excitement without cause and frequently mixed symptoms of dementia paralytica.

Its predisposing influences are old age, atrophy of the brain from alcoholism, atheroma, affections of the lungs, heart and kidneys, chronic psychoses, anæmia perniciosa, hæmophilia, scorbutus.

Its duration may extend from one day to one year and longer.

For *therapeutic hints* see under meningitis and apoplexy.

Encephalitis; Abscess of the Brain; Red and Yellow Softening of the Brain.

It is a true inflammatory lesion of the cerebral substance, a *red* softening and consequent abscess of the brain. The *yellow* softening is the consequence of a hæmorrhagic infarction, through the

plugging up of a cerebral vessel, which may lead, however, by irritation, to a true encephalitis, and so may, vice versa, after its inflammatory stage has passed away, the true encephalitis assume the appearance of yellow softening and even be accompanied on the surrounding cerebral tissue by a partial necrosis, so that indeed we may find spots of softening in the brain, of which we cannot ascertain the nature of the preceding process. True encephalitis is found always only in small spots (foci). These foci are red from extravasated blood and swollen; its boundaries imperfectly defined. By and by, if they are not absorbed almost completely, which small ones of a traumatic nature certainly do in many cases, they undergo the well-known destructive and reabsorbing changes; we see before us a focus of yellow softening, which gradually becomes more colorless, is transformed into a cavity with a thin emulsive fluid, and may, at last, lead to the formation of firm sclerotic cicatrices; or the transformation results in a collection of pus—an abscess. Recent abscesses have usually no enveloping capsule, while old ones have. As they grow they increase the intercranial pressure and retard the circulation in the brain, or compress the neighboring vessels in such a degree as to cause yellow softening of the surrounding brain-tissue to a large extent. The abscess may perforate the surface of the brain into the ventricles, or open upon the base and give rise to diffuse acute meningitis of the base.

It causes widespread acute œdema and also anæmia of the brain, and when located in the cerebellum in such a position that it lessens the cavity of the fourth ventricle, or of the aquæductus Sylvii, hydrocephalus internus chronicus.

It may discharge through the skull into the subcutaneous tissue, or into the frontal sinuses and nasal fossæ, or through the temporal bone in the neighborhood of the processus zygomaticus, under the temporal muscle, or into the cavity of the tympanum.

Abscess of the brain is either single or multiple and varies in size.

The most frequent Cause of acute inflammation and *recent abscess* is *traumatic injury;* but there are also mentioned: Affections of the skull-bones, tumors in the brain, acute diseases, such as typhoid, scarlatina, affections of the heart, suppurating and sloughing processes in different portions of the body. These same causes apply to the *capsulated and chronic abscess.*

Its Symptoms are not at all well defined. An acute encephalitis,

say from a non-perforating *injury* of the head, may run its course without our having a suspicion of its existence. Still symptoms, like the following, should not be unheeded: Dizziness; headache; vomiting; loss of consciousness; sopor; pupils wide and fixed; pulse slow; rolling of the eyeballs; transitory divergence; paralysis of the face or even hemiparesis or hemiplegia; twitching of both hands and feet; convulsions of the extremities. Its extent cannot be determined. If not cured, it may result in calcification of ganglion-cells, situated under the injured part; in chronic irritable melancholy; in chronic headache, dizziness, anxiety and hallucinations; in inability to think, with intercurrent periods of excitement and illusions of the senses; in complete imbecility, in a state resembling dementia paralytica; in epilepsy and tumors.

The DIAGNOSIS must principally be based on the knowledge of its etiology.

THERAPEUTIC HINTS may be looked after under the preceding chapters on the different forms of meningitis.

Insulatio, Sunstroke, Thermic Fever.

Whether it be, according to von Grauvogl, a want of water in the blood; or according to H. C. Wood, a paralysis of the vasomotor nerves or some controlling centre in the brain, which influences the production of heat in the body; or according to Hill in *Braithwaite's Retrospect*, 1867, an imperfect decarbonization of the blood; or according to Huguen, a hyperæmia of the pia and brain; or according to Arndt, a diffuse encephalitis; or according to Nothnagel, a venous hyperæmia, dependent upon a diminished power of activity of the heart; or according to R. Gregg, a development of gas or steam in the brain—we shall leave undecided; all physicians, however, agree that it is caused by the influence of excessive heat, and not merely by an exposure to the direct rays of the sun. The results of post-mortems are meagre; the most important may be gleaned from Dr. H. C. Wood's, Jr., *Thermic Fever*, 1872, in which he states: "Right heart and pulmonary arteries, with their branches, gorged with dark fluid blood; venous congestion of the lungs and entire body. The heart, especially left ventricle, rigidly contracted in every case, caused by a coagulation of the myosin, is *pathognomic*

of sunstroke. In most cases, however, it is a post-mortem rather than an ante-mortem phenomenon. The muscles after death from heatstroke soon become rigid, sometimes instantaneously so." As PREDISPOSING CAUSES are enumerated: "Want of acclimatization, lengthened exertions, deprivation of water, the free and habitual use of vile drinks, debility, a febrile state, fatigue, bad ventilation, improper head covering and clothing, depressing influences."

SYMPTOMS.—The final "stroke" does not at all set in without warnings. At first the wonted work becomes a burden; the muscles lose their elasticity; there is great debility, loss of appetite, but great thirst. The head grows dizzy, achy; the chest feels oppressed, with frequent and short breathing and sighing; the throat gets dry, and swallowing painful; the voice becomes weak and hoarse; there is a general anxiety and irritableness of the mind; numb feeling in the extremities; restless sleep, or great drowsiness; increased vertigo, perhaps nosebleed, redness of the conjunctiva, pale face, tottering gait, or giving way of the knees. Many complain of a dreadful goneness at the pit of the stomach, nausea, vomiting; pain in the bowels, perhaps sudden diarrhœa, with profuse cold perspiration. Oftener the bowels remain constipated. The mind becomes clouded, he answers confusedly. If for such and similar indications nothing is done in the vain hope that it be a mere transient indisposition, the "stroke" will surely and speadily follow, unless a change in the temperature should heed it off by a still more rapid turn. This last link of a whole chain of more or less pronounced symptoms is very appropriately called "stroke." As if felled down by a blow, the patient sinks suddenly to the ground, with entire loss of consciousness, and complete insensibility of longer or shorter duration; subsultus tendinum; partial spasms, or violent general convulsions; or paralysis of the spinal cord, so that he cannot move a limb. The face at first is very pale, gradually growing flushed, suffused, often deeply cyanosed, and finally assuming a leaden hue. The breathing is slow and sighing, or rapid; or deep and labored, often stertorous, with rattling in the trachea. The pulse grows feeble and exceedingly rapid; later irregular, intermittent and thready.

Such a "stroke" might be mistaken for apoplexy, if it were not for the heat of the season and the premonitory symptoms. Apoplexy may occur at any season and is often preceded by apparent good health.

Sunstroke is not necessarily fatal and least under homœopathic treatment; however, it occasionally leaves very unpleasant after-effects, which "consist principally in symptoms of deranged innervation, inability to endure heat and sunshine, insomnia, vertigo and weakness, headache which returns after exposing oneself to the rays of the sun, or comes at regular times and in various parts of the head; chronic encephalitis; insanity; constipation; dyspepsia and derangement of the liver."

THERAPEUTIC HINTS.—Man will never be satisfied. Cold water he improves by ice. Now-a-days it would be very old-fashioned not to keep ice-water summer and winter, and to gulp it down during, after and between meals. So dictates fashion, and it is good for the doctors and ice-companies. So in the treatment of sunstroke. Plain water, as well or river provide it, is entirely out of date. Being a "stroke," it must be dealt with "strikingly." Ice-water and ice-bags are the order of the day. Do we cure a frozen limb by boiling it? Will you cure a man, nearly boiling, by freezing him? Where is the sense? But fashion has none. When you are called to treat a man struck down by the sweltering heat, take water as river or well present it, and bathe his face, head, chest and spine, arms and limbs well with it. If you can have it lukewarm, it is better, because it is nearer to his temperature and by eyaporation will withdraw sufficient heat, to cool the body down to a natural temperature in a very short time, without shock or malice. This alone may restore conciousness in a short time. But we have also remedial agents which may prevent the stroke, or shorten its attacks and prevent bad consequences.

Among the remedies of *prevention*

Gelsem. is the most important. It covers all the symptoms of a man who feels "play'd out," as Lilienthal so characteristically designates it. It is especially indicated in hot, damp, stifling weather, the exact meteorological condition of sunstroke and it has, at least in my practice, proved itself adequate to the occasion.

Acon. and **Arsen.**, are characterized by great thirst, hot and dry skin.

Ant. crud., by a white tongue, loss of appetite.

Bryon., by great thirst, gastric derangements and aversion to motion.

Carb. veg., vertigo; heaviness of head; pulsative pain above eyes; general debility; obtuseness of sensibility.

Laches., by great dryness of throat, hoarseness; tightness and oppression of chest, and drowsiness.

Ver. vir., by prostration, febrile motion and accelerated pulse.

Among the remedies *during the attack*

Glonoin is the most important. Violent headache; vertigo; does. not know the street nor his own house; losing senses and sinking down unconcious. Conjunctiva reddened; mist, black spots or visions of light before the eyes; pale and agitated countenance. White tongue as if painted. Thirst, pain and throbbing in the pit of stomach with a sense of sinking. Oppressed breathing, sighing, constriction and anxiety. Laborious and violent action of the heart. Numbness of limbs; muscular tremor; great prostration; sopor; convulsions.

Amyl nitr., anxiety; longing for fresh air; dull confusion of head; giddy, intoxicated feeling; head feels full to bursting; eyes protruded, staring; conjunctiva bloodshot; intense surging of blood to the face; crampy, epigastric pain; burning and pressure in stomach; dyspnœa and constriction of chest and heart; tumultuous beating of heart; tremulousness of hands and tired feeling in legs; tottering gait; weak, relaxed feeling.

Bellad., similar to Glonoin. Drowsiness; dulness of mind; congestions towards head; loss of consciousness; headache; vertigo; anguish; flashes before the eyes; whizzing in ears; constriction of chest; worse in summer heat.

Camphora, sinking of the forces; oppression of breathing; embarrassed action of the heart; coldness of body; tremors and cramps.

Opium, unconsciousness; deep coma; eyes glassy and half closed.

SEQUELÆ may be met with by

Agar., vertigo from sunlight.

Anac., loss of memory.

Baryta carb., Laches., Natr. carb., Stramon., headache from being exposed to the sun.

Apoplexia Sanguinea.

It consists of an intra-cerebral hæmorrhage, forming clots of various dimensions, usually from the size of a hazel-nut to that of a small apple, but they may be much larger or much smaller; their shape is either round or they are spread out in layers to a greater or less extent; they may occur singly, which is the rule,

or in numbers of two, four or more. Their favorite seats are the corpus striatum and the nucleus lenticularis, with the neighboring parts of the hemisphere, and the thalami optici; in other parts they occur only exceptionally, and in the cornu Ammonis, the corpus callosum or the fornix scarcely ever.

Unless fatal after a few hours, these clots and the surrounding tissue soon undergo structural changes. By absorption of the fluid-parts the whole mass thickens, turns at first dark red and later yellowish, and the surrounding tissue becomes soft partly from the inbibition of serum and partly from fatty degeneration, or inflames to a greater or less extent. If the patient survives the attack for some time, the clot forms into a cyst which may persist without change, or is converted into so-called apoplectic cicatricial tissue.

Capillary hæmorrhages, showing blood-points of the size of a pin's head and smaller, are met with in places of softening, or in the cortex cerebri in consequence of thrombosis of the venous sinuses; they are secondary processes and should not be considered under this head.

The Cause of these intra-cerebral hæmorrhages is now in general attributed to a diseased condition of the cerebral vessels, especially the arteries, which consists according to Charcot and Bouchard in the formation of *numerous miliary aneurisms*, in consequence of chronic periarteritis. They may burst spontaneously under an ordinary amount of blood-pressure within the cranium, as in cases where the apoplectic attack occurs during sleep or in perfect rest, or they may be ruptured by an increased amount of blood-pressure during spells of hard coughing, vomiting, laughing, straining at stool, or during parturition; in consequence of mental excitement, or bodily exertions; after a full meal and the use of alcohol and coffee and other cardiac stimulants. The most frequent occurrence of apoplectic attacks is after forty years of age, although childhood is not exempt.

Symptoms.—In some cases, not in all, the first attack is preceded by premonitions for weeks, months, even years. These are: frequently recurring dizziness, headache, ringing in the ears, muscæ volitantes, alterations in the disposition, sudden but transient loss of power to speak without paralysis of the tongue; sudden transient paresis in one arm, or leg, or both; or a sense of stiffness, a feeling of "pins and needles," numb feelings, or sensation of heat and cold, or of pain of an indescribable character

in the extremities; disturbances of vision, diplopia and even amorosis; sometimes nosebleed.

The attack itself is ushered in by a sudden loss of consciousness, in many but not in all cases. It may develop itself gradually with symptoms above described, and unconsciousness following only after a lapse of several hours or days, especially after venesection; or it may commence with paralyis of one side; or with chronic or tonic spasms of certain muscles which later become paralyzed, when hours afterwards sopor follows; or consciousness may not be lost for a moment, although the symptoms which precede the attack and those which usually follow and remain permanently after the return of consciousness in the usual cases, leave no doubt of an actual intra-cranial hæmorrhage. In case of complete sopor and relaxation of all the muscles in a degree that hemiplegia cannot be recognized in order to distinguish the attack from opium poison, asphyxia, etc., we shall find the eyeballs turned toward the non-paralyzed side of the body; this symptom usually lasts a few days. The color of the face is not uniformly the same in all cases; sometimes it is deep red, even cyanotic; sometimes natural, or again quite pale; the pupils may be dilated, of normal size or contracted; one pupil larger than the other points to a unilateral affection of the brain; the pulse varies likewise in different cases; in most cases it is slow and sometimes irregular; in others very rapid and regular; the respiration may be quiet and regular as in healthy sleep; it may be labored, stertorous; it may, during deep sopor, be a kind of blowing, drawing the cheeks in during inspiration and puffing them out during expiration—the so-called tobacco-smoker's respiration; towards the end respiration becomes intermittent and irregular. The temperature is at first usually lowered to 96.3° F., and remains so in the fulminating form until death. If life endures for from ten to twenty-four hours, the temperature rises rapidly. If life is prolonged to a still longer period, the temperature rises only to 99.8° or 100.4° F. where it remains; another sudden rise is a very unfavorable symptom, as it usually precedes death. Urine and fæces pass off involuntarily during sopor. Fulminating cases terminate in from five minutes (rare cases) to three or four days. Recovery rarely takes place after the coma has lasted forty-eight hours. But even if the coma ceases, health is by far not restored; now inflammatory reaction sets in; the temperature rises from a few tenths of a degree to two degrees; there

is occasional cloudiness of mind, even delirium; loss of appetite; convulsive movements, even tonic contractions with pain in these parts. This may last for several days, and then subside for a time, when the same symptoms, although in a milder form, reappear again at intervals of two, four or eight days. But there remain permanent symptoms for a long time often through life which depend on the extent and seat of the destruction caused by the hæmorrhage. These are, with a few exceptions, *hemiplegia* of that side of the body which is opposite to that in which the lesion of the brain occurred; *paraplegia* if the hæmorrhage occurred simultaneously in both hemispheres; *partial paralysis*, for example, of the facial nerve, in connection with extravasation in the optic thalamus, and in the corpus striatum; *contracture* (in the later stages) of the paralyzed limbs; *anæsthesia* of the affected parts, which may or may not diminish or completely disappear; *hyperalgesia*, by which a light touch is felt as pain, and which may alternate with anæsthesia or even exist side by side with it for years; *spontaneous attacks of pain* in the partially or totally paralyzed limbs.

There are also disturbances of the *trophic* and *vasomotor nerves*. The affected limbs are often hotter and redder for some time than those of the unaffected side; they are swollen, œdematous; they sweat profusely; after some time, however, they become cold; or the skin is tending to be dry and scaly from the first; the pulse is diminished in its amplitude; bedsores appear; the nails become yellowish, ridgy, brittle and curved in both directions; the hair grows thicker and longer, and the skin becomes hypertrophied—all on the paralyzed side.

Of the special senses *taste* is limited to the forepart of the tongue on one side in consequence of an affection of the chorda tympani; this symptom usually disappears soon, but may last for a long time. *Hearing* is sometimes slightly affected, and *sight* in the form of hemiopia frequently.

Among the *mental* disturbances deficiency of memory is the most prominent, especially in regard to recent impressions, while old ones can be recalled with unimpaired distinctness. The power of judging may gradually weaken until the patient is reduced to childishness or dementia; the disposition often changes to peevishness and irritableness.

The Prognosis is grave; even if recovery from the shock takes place, the consequences of the reactive inflammation are always

to be dreaded, and there is no safety for a renewed attack at any time thereafter.

THERAPEUTIC HINTS.—Remedies to prevent the attack ought to be studied under *hyperæmia*, to which may be added:

Sepia, after previous attacks; in men who have been addicted to drinking and sexual excesses, with a disposition to gout and hæmorrhoids. Forerunners: dizziness in walking, with staggering; things fall out of their hand; forgetfulness; use wrong words when writing; cold feet; intermitting pulse.

Remedies *during the attack* and its *inflammatory stage:*

Acon., head hot; carotids throbbing; skin hot; pulse full and hard, but not intermittent; after fright or vexation, or suppressed habitual bleedings.

Arnica, head hot and rest of body cool; paralysis of left side; pulse intermittent or irregular.

Bellad., red face; dilated pupils; loss of sight, smell and speech; pulsation of carotids; spasms in the face; thick tongue, protruding; difficult deglutition; involuntary emission of urine; reaching with the hands to the genitals; moaning; paralysis of limbs right or left; coma, sopor.

Coccul., face red and hot; eyes closed, with the balls constantly rolling about; pupils dilated; breathing without noise; stupor; left or right extremities paralyzed; after night-watching and exhaustion.

Gelsem. and **Glonoin.**, see under Hyperæmia.

Hyosc., sudden falling down with a shriek; soporous condition; face red; inability to swallow; involuntary discharge of feces; blood-vessels swollen; pulse quick and full; numbness of hands after consciousness returns.

Laches., left side mostly affected; blowing expiration; cannot bear anything to touch his neck; when conscious, talks and jumps abruptly from one idea to another; after the use of liquors or mental emotions.

Lauroc., vertigo; bloated face; jerking of the facial muscles; speechless by full consciousness; palpitation of the heart; scarcely perceptible pulse; cold, moist skin.

Nux vom., snoring; paralysis of lower jaw and (mostly) of the lower extremities, which are cold and without sensation; after a hearty dinner, or abuse of liquor or coffee.

Opium, open eyes; dilated pupils; red face; jerking of the mus-

cles of the face; sinking of the lower jaw; foam before the mouth; slow, irregular or stertorous breathing; convulsive motions of the extremities, or tetanic stiffness of the whole body; cold paralyzed limbs; hot sweat on the head. After consciousness is restored, the patient cannot retain what he reads and forgets the connection of consecutive thoughts. Old drunkards; is followed well by Nux vom.

Remedies *for subsequent chronic changes:*

Anac., loss of memory; general paralysis.

Caustic., inability to select proper words; paralysis of face or extremities, which latter is complicated with muscular contractions.

Cuprum, paralysis of tongue, stuttering, deficient speech; the paralyzed limbs grow thinner, but preserve sensation; frequently complicated with unyielding contractions or chorea-like paroxysms.

Plumbum, consciousness blunted; memory deficient; speech impeded, single syllables are omitted or the syllables cannot be combined into words; mimic spasms of face when speaking; trembling of tongue when it is put out; semi-paralysis of the buccinator muscles and of the velum palatinum, which manifests itself by violent snoring; sleeplessness, fear of death; the organs of the senses are torpid and insensible, the eyes are principally affected; the eyelids droop as if paralyzed; the pupils most constantly dilated; all objects seem smaller and farther removed from the focus of vision; they may be seen as through a gauze; diplopia; pulse always slow, 50 to 60 in the minute; sometimes hard and tense like a wire; all the muscles may be paralyzed, especially of left side; the paralysis affects equally the motor and the sentient nerves, is often attended with violent pains in the paralyzed parts, and considerable contractions, especially of the extensor muscles, which feel as hard as wood; in other cases the spasms are tonic, which, if they reach their full development, run into complete epileptic convulsions; the muscles of the affected parts become atrophied. If the paralysis is not complete, the patient's gait is unsteady, with particular tendency to fall forward. The paralyzed respiratory muscles often occasion a high degree of dyspnœa. The sphincters are scarcely ever paralyzed. (Baehr).

Zincum, senses remain disturbed after the attack.

Besides, compare what has been said under Meningitis.

Occlusion of the Cerebral Arteries; Embolism and Thrombosis; Softening of the Brain.

An occlusion of the cerebral arteries takes place either by *embolism*, when the occluding mass is carried by the stream of blood from some other parts of the vascular system to a place where, on account of the smallness of the vessel, it cannot go any farther; or by *thrombosis*, when the occluding mass is produced on the very spot of the occlusion.

The **emboli** consist either of blood clots, masses of fiberine, connective-tissue growths, or chalky concretions, the principal source of which is *endocarditis;* and next *aneurism* of the aorta; seldom thrombotic masses from within the lungs.

Thrombosis takes its origin through structural changes in the vascular walls, such as fatty degeneration, or inflammation of the coates of the arteries, leading to sclerosis, ossification, or calcification, by which a gradual slackening in the speed of the blood-current takes place, until an entire stoppage ensues.

The emboli are carried much oftener into the left carotid than into the right, and they only exceptionally become lodged below the circle of Willis, but are swept into the arteria fossæ Silvii, which is the chief direct prolongation of the carotid. Sometimes several arteries become the seat of occlusion at the same time. If the seat of occlusion is below or on the cardiac side of the circle of Willis, or if the embolus is swept onward into the arterial system of the cortex, no anatomical changes follow in the cerebral substance, because the circulatory disturbances are readily compensated for by collateral circulation. When, however, the embolus is lodged in a terminal artery of the basal system, or is carried beyond the circle of Willis, it causes first "**red softening**" of the neighboring brain-tissue, that is, the brain substance appears swollen and discolored in different shades of red and is dispersed with numerous dots of blood ("capillary apoplexies"). By and by the red color fades into yellow, partly from the absorption of the coloring matter of the blood, and partly from the ensuing fatty degeneration of the nerve elements; this state of things is called "**yellow softening.**" After a lapse of several months, if the patient lives that long, the affected tissue is converted into a semi-fluid milky substance, which is termed "**white softening.**" At length even this may partially be absorbed, leaving a sort of cyst filled with quite thin fluid.

The Predisposing Cause of *embolism* is preëminently acute rheumatism, and it is therefore found oftener in relatively youthful persons, while thrombosis has its predisposing cause in a morbid change of the vascular system, and is therefore oftenest met with in advanced years.

Symptoms.—*Embolism* always sets in suddenly and very often with a condition, which resembles precisely that of an apoplectic stroke, without any premonitory symptoms. In some cases, however, there is no loss of consciousness or coma; there may be delirium, aphasia, vomiting, paralysis—all disappearing in a few hours.

Thrombosis comes on slowly with headache, dizziness and a sense of general confusion, loss of memory, numbness, coldness and creepings either in only one extremity, or throughout the distribution of one nerve, or in one entire half of the body; paretic and paralytic symptoms, perhaps with preceding slight convulsive movements, likewise confined to certain regions of the body and determined by the size and importance of the occluded vessel. Finally the total occlusion may manifest itself with all the symptoms of an apoplectic fit, or may occur without any loss of consciousness.

In the further course of development embolism or thrombosis may be described conjointly. Either of them may terminate in death or in complete recovery, or be followed by a repetition, or by a chronic development of symptoms as consequences of the structural changes within the brain above described. Only these latter symptoms concern us here. The temperature begins to rise on the second or third day and may quickly reach 104° F., when after two or three days it rapidly sinks again and finally becomes stationary. Indeed the complex of symptoms now developing may be regarded as identical with that of cerebral hæmorrhage, and need not, therefore, be repeated. *Aphasia* is of very frequent occurrence in this affection, because the left Sylvian artery is the most common seat for embolic occlusions, inducing functional disturbances in that district of the cortex cerebri with which disorders of speech are regularly associated.

The Diagnosis between embolism and hæmorrhage is very difficult, unless we can take the predisposing causes (valvular diseases of heart and affections of the lungs) as a starting point. A distinction between thrombosis and hæmorrhage is not possible, only that the first occurs much less frequently than the latter.

THERAPEUTIC HINTS.—Compare Apoplexy and the various forms of meningeal affections spoken of before, to which I add the following remarks of Dr. H. R. Stiles: "When the disease shows evidence of inflammatory action, or is recent, **Bellad., Nux vom., Mercur.**; where it is evidently due to atheromatous conditions of arteries, **Phosphor., Phosph. ac., Anac., Zincum**; for hemiplegia, **Nux vom., Coccul., Baryta carb., Arnica**; for vertigo, **Iodine** (congestive); **Sulphur, Digit.** (cardiac); for sleeplessness, **Coffea, Hyosc.**, or **Nux vom.**, and **Chamom.**, if the patient has been addicted to the use of coffee; **China**, if he has been a great tea drinker; for paralysis (general), **Phosphor., Conium, Coccul.**, (local) **Caustic., Acon., Ignat., Bellad.**; for convulsions (simulating epilepsy), **Bellad., Calc. carb., Cuprum, Strychnine**; for emotional disturbances, **Ignat.**; headache (active), **Acon., Bellad., Bryon., Nux vom., Glonoin.**, (passive) **Gelsem., Opium**; for imbecility, **Arnica, Ambra, Selen., Sepia**; or sensation of formication, **Secale.**"

Aphasia.

Under this term clinical observers have arranged a variety of deficiencies of speech.

When there is *an incapacity for the motor co-ordination*, so that the patient, although he understands all that is said to him and is able to express his wishes by writing, is yet unable to express them by words, although his organs of speech—tongue, etc.,—are in perfect order, it is called **ataxia aphasia.** Here the connection between the idea and the organs of speech is interrupted. In some of these cases this does not amount to *entire speechlessness; some words of one syllable* may possibly be in his reach, and he uses them as best he can, making up by writing and gestures what he cannot convey by words; others utter only a few *senseless syllables and words;* but none can *repeat words* even if *dictated* to them. At times ataxic aphasia is complicated with **agraphia**, an inability to write either *a single letter* or *a combination of letters into intelligible words and sentences*, although otherwise the hands are fit to perform all sorts of other mechanical uses. The *speech of gestures* is seldom implicated in this affection.

When there is *an incapacity for the recollection of words, although the idea is present* and *the articulation is at the service of the word*, it is called **amnesic aphasia.** Here the association between the *idea* and the *word* (its verbal expression) is interrupted. This occurs

even during health. Sometimes, with our best endeavors, we can not recollect a name; in the diseased state especially *nouns*, which cannot be roused into consciousness; therefore the patient tries to describe what he means by other words, for instance calling a pair of scissors "that which cuts." Or it is only the *initial letters* which are wanting, and he omits them in speaking and writing; or in more profound derangements, although the patient may be able, by paying strict attention, to repeat what another speaks aloud before him several times, of his own accord he cannot utter it at all, or only badly articulated, mutilated and distorted. So also the letter-signs are either totally forgotten, or applied in unintelligible connections, while on the other hand the reading of written or printed matter may not meet any obstacles.

When there is *an inability to understand the words which they hear*, or *to read the words which they see*, although sight or hearing and the ability to express their thoughts by speech and writing are unimpaired, it is called **word-deafness** and **word-blindness** (Kussmaul). Here the association between the *word* (spoken or written) and the *idea* is impeded, or in other words the external stimulus does not reach the *idea*, while in the amnesic form of aphasia the *idea* is not capable of exciting its corresponding verbal *expression*. This affection, however, is generally combined with amnesic aphasia or agraphia, and patients of this kind have been taken for deaf and demented, because their answers did not correspond to the sense of the questions, and they used distorted or wrong words.

When there is *an inability to connect the ideas with their appropriate word-expressions*, so that instead of the appropriate term, another word of a different meaning or altogether strange and unintelligible expressions are used, it is called **paraphasia.** Here the connection between the ideas and their proper expressions is loosened, in a way that other words or names of ideas similar perhaps in meaning or sound interpose themselves and repress the proper ones. This disorder occurs at times without any pronounced morbid condition of the brain, when for instance from want of proper attention we use a word which belongs perhaps to another train of thoughts, but which at that time preoccupies the mind; or in the hurry of excitement, displace the consonants of certain words and form strange, irregular combinations, say, for instance, "mood gorning" instead of "good

morning," or instead of "Liebig and Mitscherlich," as an absent-minded professor did, "Mitschich und Liederlich." But in marked states of the brain this paraphasic confusion may amount to such total perversion and corruption of words and sentences that it is completely impossible for the hearer to understand what the patient means. And the same is true of *paragraphia*. "Royal naval medical office, etc.," one wrote in the following manner: "Roydudendd navendendd oforendendd, etc."

By numerous post-mortems it is proved that lesions of the *left* frontal lobe, and especially its third frontal convolution are the most frequent CAUSES of *aphasia;* the island with the neighboring frontal, parietal and temporal districts comes next in frequency. Aphasias, from lesions in other regions are exceptions to the rule, as for instance the lesions of the *right* frontal lobe. These latter cause aphasia only in *left-handed* people, for the reason that such persons have exercised for speech and action the *right* frontal lobe; a lesion of the *left* frontal lobe does not affect their speech, since that of the right, which alone has been exercised, remains intact. Left-handed people, therefore, become aphasic only when the lesions include the right hemisphere; while lesions of the left lobe always cause aphasia in right-handed persons.

These lesions for the most part consist of *necrotic softenings* from *embolism* and *thrombosis* of the artery of the fissure of Sylvius; then follow in frequency in the order named *hæmorrhages*, *abscesses* and *tumors* of this region. Aphasia is, therefore, merely a symptom of pathological conditions, most of which we have already described separately. Its PROGNOSIS depends entirely on the severity of these conditions, and they ought to be studied thoroughly in any case of aphasia.

THERAPEUTIC HINTS.—Here we must naturally refer to those already given under the corresponding chapters. Cases reported have been cured by:

Bellad., compare symptoms under apoplexy.

Conium, parenchymatous nephritis after scarlet fever.

Glonoin., loss of memory for words and of the power to articulate.

Kali brom., 3d trit., without symptoms mentioned.

Lycop., confusion of thoughts; forgetful; mixed up letters and syllables of words in writing, or left out part of them.

Stramon., in several cases used empirically with success.

For additional hints compare the following collection of symptoms:—

Senseless after waking from a sleep at noon: Conium.
Forgetful and absent-minded, with headache: Amm. carb.
Cannot remember things which he wants to remember: Hyos. nig.
Forgets names: Anac., Olean., Sulphur.
Remembers having seen a person, but cannot remember her name: Crocus.
All things appear new to him, after waking, even his friends: Stramon.
Makes mistakes about time and objects, although they are quite clear and visible: Crocus.
Unable to express himself properly while talking: Conium.
Cannot talk connectedly: Canthar.
—— nor express himself properly, with rush of blood to the head: Arg. nitr.
Distracted, does not know what to say: Natr. mur.
Slow remembrance, talks slow, hunts for the words when talking: Thuja.
Absentminded and forgetful: Alum., Bellad., Bovista., Coccul., Phosph. ac., Platin.
—— with awkwardness in talking: Amm. carb., Natr. mur., Sepia, Sulph. ac.
—— and awkwardness in writing: Bovista.
Inability to find the right words: Anac., Arg. nitr., Mercur., Pulsat.
—— with stammering: Chamom., Opium.
—— with making mistakes in writing: Chamom., China, Graphit., Hepar, Ignat., Nux vom.
With headache uses wrong words: Caustic., Nux mosch., or
—— has difficulty in talking: Thuja.
Absent-minded, says what she does not intend: Natr. mur., and
—— makes mistakes in writing: Natr. mur.
Leaves words out when writing: Rhodod.
When he wants to write something down, he loses the ideas: Crocus.
Forgetful, so that he cannot recall what he was about to write: Natr. mur.
He can express himself on abstract subjects very well; when talking about common things, he gets confused: Lycop.
He cannot read what he wrote himself: Lycop.
Difficulty in understanding what he is reading: Conium.

Thrombosis of the Cerebral Sinuses.

The sinuses being of a rigid nature and incapable of collapsing, they being also traversed by bands of connective tissue, and having no muscular walls to promote the flow of blood, it is easily comprehensible, that in them a coagulation of blood may readily occur, if either *the propelling power of the heart, the vis a tergo, should become weakened*, or there should form obstacles to the flow of blood in the sinuses themselves *by inflammation of their walls* (*phlebitis*). The first usually occurs under conditions as are known by the name of **marasmus**, particularly common among children during their first year of life, when they are prone to sudden collapse induced by severe diarrhœas; also in adults through the influence of various conditions which induce enfeeblement of the propelling force of the heart, such as profuse suppuration, cancer, marasmus senilis, etc. This form of thrombosis is especially found in the longitudinal sinus and in the transverse sinuses, and is called **marantic thrombosis.**

The second or **phlebitic** form originates most commonly from disease of the cranial bones, especially *of the petrous portion of the temporal bones* which accompanies otitis media; then its seat is in the neighboring sinuses—the sinus transversus and petrosus; if phlebitis arises from caries of *other cranial bones*, or *large furuncles* in the face, especially on the upper lip, or *erysipelas of the head and face*, its seat is determined by the location of these lesions.

The Symptoms of *marantic thrombosis* when accompanying conditions of marasmus in children, resemble greatly those of hydrencephaloid, both giving rise to cerebral anæmia; collapse, followed by somnolence and coma is common to both. As a general rule of distinction between the two, the following may be laid down: If diarrhœas, occurring in children a few months old, are followed by cerebral disorders of the active motor kind, such as rigidity of the muscles of the neck and sometimes of the back, and even of the limbs, sometimes nystagmus, the probability speaks for thrombosis of the superior longitudinal sinus; whereas the clinical history of hydrencephaloid usually closes with collapse, somnolence and coma, terminating either in death or recovery; convulsions or paralysis are only exceptionally met with.

Marantic thrombosis in *adults* is in its manifestations still more indefinite. It may show nothing but a slight degree of apathy and general depression, a varying complex of symptoms of dif-

fused, undefined cerebral diseases, such as headache, delirium, loss of consciousness, disturbance of the motor functions either of the spasmodic or paralytic kind. In *some* cases, however, symptoms occur in children as well as in adults, which are diagnostic, namely: *swelling of those veins outside of the skull*, which communicate with the affected sinuses; *epistaxis; tensely filled vessels*, running from the anterior fontanel to the neighborhood of the temples and ears on both sides; *cyanosis of the face*, all this in case of thrombosis of the superior longitudinal sinus.

When the transverse sinuses are affected, there may be *œdema* limited to the parts behind the ears; or the internal jugular vein may be found less filled on the side of the lesion, than on the other side, but this symptom is not often so prominent that it could be turned to account.

When the sinus cavernosus is the seat of the disease, there usually exists *hyperæmia of the fundus oculi*, *œdema of the eyelids* and *conjunctiva*, and *prominence of the eyeball;* sometimes on account of the pressure upon the first division of the trigeminus, the trochlearis, the abducens, and the oculo-motorius, paralysis of the motor nerves, or neuralgia or trophic disturbance of the eye may arise.

Sometimes particles from the thrombi are carried off by the blood-current and become lodged in the lungs. If such pulmonary embolism are found under conditions above described, it would be another sign in favor of the conclusion, that thrombosis of the cerebral sinuses actually exists.

The Prognosis of this affection is decidedly unfavorably, and in regard to *therapeutic hints*, I must refer to hydrencephaloid, anæmia, summer-complaint, inflammation of the inner ear and other affections which are more or less related to this affection.

Hypertrophy of the Brain

Means an overgrowth of the brain. However, we ought to know, that it is not the cerebral substance itself, which develops more largely, than naturally, but that it consists of an undue growth of the interstitial tissue which binds the nervous elements together. It is confined mostly to the cerebrum; yet there are a few cases in which the cerebellum has also been said to be affected. *Partial* hypertrophy is still more rare, and, in part, of very doubtful nature.

On post-mortem examination the brain is observed to swell out from under the removed bone above the skull bones. The adjustment of the removed bones to their original position is quite difficult. The membranes are thin and bloodless and between the arachnoidal spaces there is no cerebro-spinal fluid. The convolutions on the surface of the cerebral hemispheres are flattened and compressed, and the sulci between them scarcely noticeable. The ventricles are narrow and the substance of the brain itself is anæmic, but its consistence and elasticity is greater than in a normal brain.

This abnormal growth is either *congenital* (and then is frequently combined with an imperfect growth of the body), or it develops itself *after birth*, mostly during early childhood, rarely afterwards. In the latter case, we find it frequently associated with rhachitis and enlarged lymphatic glands. Its CAUSES are unknown. Its external SYMPTOMS are: a considerable enlargement of the head, if it takes place *before* the sutures of the skull are perfectly closed; a condition entirely similar to that in the enlargement of the head in consequence of hydrocephalus. When it takes place *after* the closure of the sutures, such extension is impossible, but the skull bones grow thinner and their inner layer becomes roughened by absorption. In the first place it can be distinguished from hydrocephalus by this fact: that children having this affection are rather forward in their mental development, while in hydrocephalus the reverse always obtains. A hypertrophy *after* the closure of the sutures is never recognizable with certainty. One of its most important symptoms, however, are frequent attacks of fits, which resemble epilepsy.

THERAPEUTIC HINTS cannot be given *a priori*. Each individual case must be studied by itself. Compare Hyperæmia.

Atrophy of the Brain

Is the opposite of hypertrophy, a *shrinking, wasting away of the brain.*

Deficiencies of growth have been found congenital, being confined either—1, to both hemispheres of the cerebrum; or, 2, to both hemispheres of the cerebellum; or, 3, to certain parts of the brain which are not developed at all. In such cases the children are idiots. In some other cases the deficiency has been found confined—4, to one-half of the cerebrum and to the opposite half

of the cerebellum, (the usual condition), or to the corresponding half of the cerebellum; then the children are not idiots, but mostly affected with hemiplegia of the opposite side and in a great many cases with epileptic fits. This deficiency, in the proper development of the brain, the causes of which we do not know, is called **agenesia.**

Real atrophy is a shrinking—wasting away—of the cerebral substance. It occurs, occasionly, in old age, in consequence of marasmus senilis, where a want of general nutrition causes a waste of the brain; the lost substance being at once replaced by an exudation of serum, constituting hydrocephalus senilis. It also occurs as a result of exhausting diseases and chronic alcoholism; almost always leading to general paralysis and imbecility of mind.

But it may develop itself in portions of the brain only—**partial atrophy**—when in consequence of apoplexy, inflammation or exudation, as we have already seen, by destruction or pressure upon the capillaries or arteries, such portions become deprived of the necessary nutrition. Its consequences are, in almost all cases, aberrations of the intellect, imbecility of mind, and paralytic affections.

THERAPEUTIC HINTS.—A deficient development of a portion of the brain can not be remedied; congenital deficiencies are therefore clearly out of the reach of any medicine. Where we suspect an atrophy in consequence of exhausting disease, we must select our remedies according to these circumstances. Destroyed portions will ever remain destroyed in spite of medicine.

Dementia Paralytica

Is understood as "a diffused disease of the brain and often also of the spinal cord, which is characterized by a peculiar combination of physical changes with motor disturbances in the muscles of different parts of the body, which has a chronic course and ends in death." (Hitzig).

In the protracted cases post-mortem always shows atrophy of the brain, which can be recognized by inspection and frequently by weight. The dura lies in folds over the frontal lobes; the pia is either locally or universally œdematous; the ventricles are enlarged; the dura often adheres so firmly to the skull that it can-

not be removed without injuring the brain; it may present all varieties of dulness, thickening and deposits upon its surface, also innumerable larger or smaller flattened extravasations, which have all shades of color between yellow, red and black; even large hæmatomas have been found; yet there are numerous other cases in which the dura appeared intact. The brain-tissue by microscopical examination reveals a chronic or sometimes a sub-acute interstitial (peri) encephalitis, which in course of time leads to destruction of the ganglion cells and to atrophy of the brain. The *spinal cord* presents gray degeneration of the posterior columns or granular cell myelitis; the *membranes* of the spinal cord undergo, though more rarely, changes similar to those of the brain.

As predisposing CAUSES *heredity* has been mentioned. Probably the combination of excessive labor with excesses in Baccho and Venere is the most common cause, although injuries of the head, constitutional syphilis and the influence of acute febrile diseases may also give rise to the development of this disease. It scarcely occurs under the age of twenty; is most frequent between thirty and forty-five or, according to some authors, between fifty and sixty years of age.

Its PRODROMAL SYMPTOMS, which sometimes for years precede the final outbreak, are the most important for the physician, because then and there lies his only chance of preventing greater mischief. Spells of *dizziness*, which pass over quickly; of *headache*, more or less severe and worse in the morning; of *rheumatic pains*, especially in the lower extremities, changing location and coming and going suddenly, worse at night. With these chance symptoms appear an unusual *irritability* of character entirely foreign to the patient's former behavior, and a *weakness of memory*, especially for recent events, while past ones are well remembered; he often forgets his hat, his cane, or pocket handkerchief, etc.; the *muscles* around his mouth occasionally are seen to *tremble* either spontaneously or when other facial muscles are in action. The patient is unconscious of it, and recognizes the fact only when he sees it in the mirror; his *speech* becomes nasal, or difficult and imperfect, especially in regard to the labials and sibilants; a kind of lisping as if slightly intoxicated; the tongue trembles, and the voice changes. Apoplectic attacks are often the commencement of the disease.

In its further progress the patient shows peculiar exaggerated ideas of his own importance or greatness, he possesses a thousand or a million horses, a thousand million dollars, etc., and although now it may be proved to him, that he is wrong, he immediately forgets all about it, and gradually falls into an idiotic silliness from the weakness of memory, which was one of the very first symptoms of the disease. He also gradually loses his affection for his family and before his friends may have become aware of his unaccountableness, he may have squandered away the very subsistence of his family. Sometimes there are *outbursts of anger* amounting to blind rage, making him dangerous to those around him, and in other cases we meet with depressing, hypochondriacal, melancholic states of mind, which again may interchange with conditions of excitation. So also is *kleptomania* of frequent occurrence; the patients pocket things without in fact knowing it, or carry them away openly, because they believe they are making use of their own property.

The Motor Changes consist either of disturbances of co-ordination—staggering when the eyes are shut; jerking, uncertain gait, difficulty of turning round, peculiar trembling, jerky handwriting—when there is gray degeneration of the posterior columns—or shuffling, awkward, helpless gait, unsteadiness on attempting to turn quickly, but no increased swaying of the body when the eyes are shut—when there is granular-cell myelitis. More or less complete, persistent, unilateral facial paralysis is often noticed, and if apoplectic attacks repeat, they leave behind hemiplegia which may disappear again, while the intelligence degenerates so much more quickly; or the attack is often combined with unilateral or general epileptiform spasms, ending occasionally in death. *Anæsthesia*, persistent and extreme, is found in all cases, when far enough advanced.

Senile Dementia.

"To be perfectly candid, we must confess that there is not a single symptom which is so pathognomonic of general paralysis that it may not be found also in senile dementia, and excepting the peculiar weakness of memory, in *alcoholism* also; and even the grouping of the symptoms as a whole may in the two latter diseases be such as to afford an entire analogy with undoubted cases of general paralysis. In senile dementia the course of the

affection itself often enough furnishes no definite conclusion, while alcoholism certainly affords a much more favorable prognosis."

"Only those cases can with certainty be considered as senile dementia in which advanced age, want of motor disturbances, or the presence of very marked hemiplegia, and, finally, absence of the extravagant delirium of grandeur, are all found associated. The delirium of old age is, as a rule, almost invariably of a more childish nature, while it is concerned with the most diverse subjects. Besides, epileptiform attacks almost never occur in the dementia of age and the apoplectic attacks of these old people are accompanied with serious permanent paralysis, if they do not end in death. Finally, the course of senile dementia is regular, less broken by remissions and intermissions. Nevertheless, that is an uncertain criterion and the same may be said to a still higher degree of all the other diagnostic points mentioned above." (Hitzig.)

THERAPEUTIC HINTS.—The following are taken from Dr. S. Lilienthal's treatise on dementia paralytica in the November number of the *Hahnemannian Monthly*, 1876.

For the remedies which hold out some hope, let us study that classical work, Hering's *Analytical Therapeutics*, where we read (l. c., pp. 114 and 115) for *headache with ill-humor*, and especially in the forenoon: Amm. carb., Platina, Kreos., Petrol., Stannum (gradual increase and gradual decrease), Phosphor., Calc. phosph.; for *headache with diminished intellectual power*, Phosphor., Nux mosch., Sarsap.; for *forgetfulness*, Amm. carb., Capsic., Caustic., Mezer., Moschus, Viol. od.; *sensation in forehead as if the skin were too tight, with anxiousness*, Phosphor.; *sensitive to light, fretful, discontented, complaining*, Arsen.; *oversensitiveness of hearing*, Carb. veg.; *noise unbearable, with anxiety*, Aurum, Capsic., Caustic., Petrol., Pulsat.; fear, with noise in the street, Caustic.; *cannot move the tongue right, with anxiety*, Caustic.; *difficult speech*, Caustic.; *absent, loses the train of ideas*, Amm. carb. (p. 247); *convulsions with or without consciousness*, Kali carb., Lycop., Nux vom., Platina, Plumbum; irritable, discontented, Nux vom.; *idiotic condition before the attacks*, Caustic.; *bodily and mental infirmity*, Natr. carb.; *lassitude in the limbs, with indisposition to work*, Amm. carb.; *mental and physical prostration in the morning*, Laches., Phosphor.; *lassitude with irritability*, Ambra, Calc. carb., Carb. veg., Caustic.;

bodily weakness, with its increase memory declines, Nitr. ac.; *mental dulness with prostration*, Alum., Anac., Aurum, Digit.; *nervous affection with mental listlessness*, Nux mosch.; *no ambition, tires soon*, Nux vom.; *indisposed to work or walk*, Zincum; *heaviness of mind and body*, Phosphor., Phosph. ac.; *sleep disturbed by restless dreams*, Arsen.; *sleeplessness before midnight*, Arsen., Kali carb., Pulsat., Veratr.; *weak memory*, Carb. veg.; *periodical mania*, Arg. nitr.

Symptoms of mania de grandeur we find under Cuprum, Platina, Lycop., Laches., Stramon., Veratr.

Symptoms of extravagance under Ammon., Bellad., Caustic., Chinin., Iodine, Petrol., Phosph. ac., Platina, Stramon., Sulphur, Veratr.

Obtuseness of intellect with obscuration of eyes, Carb. veg.

Weak memory, for correct writing, Laches.; for what has happened, Graphit., Natr. mur., Sulphur; for words, Baryta, Lycop.; on awaking, Stannum; with debility, Nitr. ac.; with headache, Kalmia, Moschus.

Sensitiveness of the ears to noise, with anxiety, Capsic.; with ill-humor, Bellad., Phosphor.

Distortion of the mouth, Bellad., Graphit., Laches., Lycop., Nux vom., Opium, Phosph. ac, Secale, Stramon.

Dilatation of pupils, Bellad., Calcar., Crocus, Hyosc., Nux vom., Opium.

Difficult speech, Bellad., Caustic., Laches., Nux vom., Opium, Sulphur, Stramon., Veratr.

Kleptomania, Sulphur, Pulsat., Arsen., Bryon., Kali, Lycop., Nux vom., Sepia.

Doxomania, conceited mania, Platina, Cuprum, Hyosc., Laches., Lycop., Stramon., Veratr. (2.) Alum., Arnica, China, Conium, Ferrum, Ipec., Paris, Phosphor., Secale.

Epileptic fits as a complication, Arsen., Bellad., Calcar., Cuprum, Hyosc., Ignat., Laches., Mercur., Opium, Nux vom., Plumbum, Pulsat., Sulphur.

Caustic.—In the disease, as well as in the remedy, we find from the start great melancholy, looking on the dark side of everything, facial neuralgia and facial paralysis, weakness of voice, and other paralytic affections. Hahnemann (*Chronic Diseases*, iii, 78) gives us the hypochondriac depression of spirits, peevishness, dull, gloomy, pressure on the brain making the head feel obtuse, vertigo, incipient amaurosis, roaring and buzzing in the ears, rheumatic and arthritic affections of all kinds, tremulous weak-

ness, epileptic convulsions, prosopalgia, paralytic affections, especially of one side. Allen (*Encyclopedia*, iii) gives us the whole complex of symptoms; the tearing, lancinating pains of the extremities, muscular twitchings, and excessive weariness in both limbs, especially in the morning in bed; attacks of spasms, in the morning in bed, sometimes with consciousness, at other times with unconsciousness; peevish, irritable mood, fretfulness, indolence, slow succession of thoughts, absence of mind with loss of ideas, weakness of memory (but no insane delusions are found under Caustic.); vertigo forward and sideways, at night in bed; vertigo, almost like a loss of consciousness, while sitting he nearly fell; constrictive pressure in the forehead; tensive headache arising from the nape of the neck; indistinct vision, it seems as though a thick cloud hovered before the eyes; spasmodic sensation in the lips, etc., etc.

Amm. carb., gloomy and uneasy mood, aggravated by cloudy weather; low spirits, with considerable excitement; very forgetful, and headache when reflecting; absence of mind, with anxiety; speaks and writes incorrectly; weight and confusion of the head; vertigo, as from intoxication; great lassitude, and disinclination to all work; most severe muscular contractions, spasms; violent rheumatic drawing pains through all the limbs, hands, feet, nape of the neck, head, etc.

Laches. for persons with a melancholic or choleric temperament, with a phlegmatic spongy constitution; with dark eyes and disposition to lowness of spirits and indolence; for acute and chronic rheumatism, recurring every year; for emaciation and exhaustion; for hemiplegia; for convulsions and epilepsy. Among its symptoms we read: Indolent, taciturn, brooding and melancholic; he considers himself too feeble to do anything, with aggravation of the symptoms every other day; great absence of mind; great weakness of memory, he forgets entirely what he had been hearing a moment before; frequent mistakes in writing; vertigo, with staggering to the left side, early in the morning after rising; deep stinging through the whole head; deep-seated headache; sensitiveness of the eyes to light; dim and weak eyes; very sensitive to noise; prosopalgia; distortion of mouth and lips; difficulty of speech, as if the tongue were too heavy; rheumatic pains extending from the back to the limbs; difficulty of falling asleep for weeks; no sleep in spite of great lassitude; constant exhausting sleeplessness; aggravation of all complaints

after sleeping; painful wandering of the pains from one part to another; awkward, stumbling gait; hemiplegia; typical recurrence of the aggravations.

Nux vom. exactly suits such cases which owe their origin to sexual excesses and immoderate intellectual exertion, and also to persons of middle age, especially when they have changed their former busy life for a quiet one. The old school also claims to have derived many a benefit from hypodermic injections of minimal doses of Strychnine in this disease; and wherever the prodromal and even the first stage last a good while, Nux may be the simile to the existing stage of the disease. Among its symptoms we find: Periodical affections of the nervous system; tearing, drawing-tensive rheumatic pains, with weakness and feeling of numbness in the affected parts; hyperæsthesia of the nerves of the senses; tonic spasms and convulsions; emotional epilepsy; central softening of the spinal cord (here also the gray matter); paralysis of the upper and lower extremities; periodical headache, gradually increasing, and after reaching its acme, gradually decreasing; dulness of mental powers; obscuration of sight; paralysis of the tongue, with difficult and indistinct speech, in consequence of cerebral apoplexy. The irritable temper of Nux is well-known, and even for the second stage of the disease we find corresponding symptoms, as awkwardness, he easily stumbles against something; makes mistakes in speaking and writing (certainly cerebral functions); compression of the head as from nightly revelling; chronic vertigo, with obscuration of sight and buzzing in the ears; twitching of the facial muscles; distortion of the mouth to one side, etc.

Phosphor. is the grand remedy for a weak, exhausted brain. Here we have to deal with a disease whose whole tendency is to degeneration of the nerve-mass, to atrophy of the brain, and we might with certainty expect some benefit from a remedy which causes fatty degeneration throughout the body. Among its symptoms we find: Great lowness of spirits; great irritability; forgetful and dizzy; vertigo; dull, stupefying headache; constrictive headache every other day; frequent attacks of sudden blindness in the daytime, and sensation as if a gray cover were hanging over the eyes; constant buzzing in the ears; pale, sickly complexion; great weariness in the extremities; sleeplessness and restlessness; heaviness of mind and body; exaggerated ideas of his own importance; monomania le grandeur et de la richesse;

forgets names and what has happened recently; unconnectedness of ideas when writing or talking; lastly silliness; idiocy.

Aurum. The suicidal melancholy of Aurum seems to mark a contraindication for this remedy in any stage of this disease, certainly during the expansive delusions. During the consequent stage of apathy and palsy it can hardly be indicated; still it was prescribed by close observers on account of the venous hyperæmia in the brain. We here find hypochondriasis, but not melancholia so much; the epilepsy rests upon a very material basis; the exhaustion is a natural consequence of premature senility, hence the disgust of life, and we mention it only as having many symptoms in common with the prodromal stage, but the causes being so often different, it will be only in rare cases of real benefit. It may alleviate, but will not stay the ravages of this disease.

Cuprum.—What Zincum is for later stages, Cuprum might be for the prodroma. According to Schmid, of Vienna, all the cerebral disorders cured by Cuprum are of the reflex order, which would limit the applicability of Cuprum in dementia paralytica to very rare cases; still, Rademacher's indication, when there is premature exhaustion of strength in illness, may point towards its use in patients of neurotic temperament, especially where heredity can be shown.

Silicea.—Carroll Dunham, in his usual masterly manner (*N. A. J. of H.*, xx, 361), thus describes the action of Silicea on the nervous system: "With evidence of exhaustion, furnished by sensation of weakness, paralysis, etc., there is an exalted condition of susceptibility to nervous stimuli; the special senses are morbidly keen, the brain cannot bear even moderate concussion, and the whole surface is unnaturally tender and sensitive; cold aggravates and warmth relieves. *There is an erethism, conjoined with exhaustion*, which is not evanescent, but endures for some time." Certainly such a remedy promises much in the prodromal stage of our disease, and carefully studied and applied in the right case may fulfil this promise and lead to a cure.

In addition I may recommend to compare corresponding chapters, previously treated of, and also chronic alcoholism.

Delirium Tremens.

Delirium tremens is an acute form of chronic alcoholism, which breaks out either during and in consequence of excessive use of

alcoholic drinks, or follows the sudden deprivation of stimulants in the case of habitual soakers.

Without any marked prodromal symptoms, it commences with hallucinations of vision (the seeing of beetles, rats, birds, serpents and the like, or other horrid images such as great black beasts, the devil, or a persecuting officer, etc.,) hallucinations always characterized by their unsteadiness and horrid nature. If the sense of hearing is affected, its hallucinations are likewise of a horrid nature, although in some cases music, songs and other pleasant things are heard. Sometimes the patients feel as if they were enclosed in a fine net of spun glass or of some textile fabric, or as if little insects were crawling under their skin. They move their hands and fingers objectlessly about, or act as if they were removing small objects from their body or bed. Their eyes look unsteady and wild and sometimes they even have nystagmus. Consciousness they lose seldom or only for a very short time, and therefore answer questions for the most part correctly. They are very restless, are very much troubled by their hallucinations and sleep never touches their eyes. In some cases they become violent, destructive, maniacal. Tremor, more or less extensive and violent is present in some and absent in other cases, as also tetanic and eclamptiform convulsions have been observed in some cases. Individual cases, however, vary greatly. All symptoms are worse during the night, and the attack lasts from a few days to a fortnight. Post-mortems have shown pigmented and thickened mucous membranes of the stomach, fatty degeneration of the liver and kidneys, pachymeningitis, and dryness and anæmia of the brain.

THERAPEUTIC HINTS.—If the attack sets in during debauch, it may be well to apply the stomach-pump, in order to rid the stomach of its alcoholic contents. It is also benefical to urge the patient to drink cold water and skimmed milk as much and as often as possible, in order to thin the alcoholic poison. One or the other of the following remedies will then act so much the more favorably.

Act. rac., restlessness and fear of death. Hale: "nausea, retching, dilated pupils, tremor of the limbs, incessant talking and changing from one subject to the other; sleeplessness; imagines strange objects, as rats, sheep, etc.; quick, full pulse, and peculiar wild look out of the eyes."

Agar., no clinical cases as yet but its symptoms call loudly for its mention in this place.

Arsen., great restlessness anxiety and oppression with cold perspiration; hallucination, especially at night; pale or yellowish color of face; eyelids red on edges; no appetite, great thirst; vomiting every morning; region of liver painful and swollen; stool retarded and as if burnt, or violent diarrhœa. For sots who have had attacks before.

Bellad., young persons with congestion to the head and excitability of the sensorium; want of memory; sparks like lightning before the eyes; anxious and unsteady, walks about as if busy and cannot be persuaded to desist of doing different things; imagines he sees water running over the table, or panes of glass, cats, etc.; wants to extract a tooth, and reaches for that purpose in his mouth: stammering, indistinct speech with a constantly smiling face; dry feeling in the throat, with difficult deglutition and violent thirst. Jerking of limbs; cramps in the calf of the legs; trembling of hands.

Calc. carb., hallucinations of fire, murder, rats, mice, etc.; red face, dilated pupils; hallooing, screaming, restless; pulse soft, full and frequent; skin moist; tongue coated whitish; constipation.

Cann. ind., when the illusions both of sight and hearing are characterized by taking the form of tremendous magnitude, so that a step appears to him as an enormous distance, or a small noise as a tremendous sound.

Coffea, thinks he is not at home; walks restlessly about; no sign of feeling sleepy; quick pulse and trembling hands.

Crotal., constant drowsiness, with inability to sleep, after Hyosc. had failed.

Digit., in cases which come on slowly with gradually increasing pain in pit of stomach, continuous nausea, thirst, palpitation of the heart, gastric headache, vertigo and paleness of face.

Gelsem., produced sleep, after morphia had failed.

Gratiola, successful in cases where the delirium assumes the character of anger rather than of anxiety, in subjects not yet greatly exhausted.

Hyosc., epileptiform fit precedes the attack; continuous talking at night; wants to run away for fear of being persecuted by the police; tremor of limbs.

Ignat., chorea-like and epileptiform convulsions; paresis; an-

æsthesia combined often with hyperæsthesia of the legs; subsultus tendinum; jerking of the limbs; trembling of the tongue.

Kali brom., in first stage with horrid illusions, flushed face, red eyes and hard and quick pulse. (Crude doses).

Nux vom., most frequently applied. Indescribable anxiety; finds no rest in any place; sees different images; congestion to the head; face pale and bloated; tongue coated white or brown, dry and thirsty; nausea and bitter vomiting; vomiting in the morning; pressing pain in stomach and region of liver; trembling, cannot bring the glass to his lips without spilling its contents; aversion to coffee; constipation or diarrhœa.

Opium, preceded by epileptiform fits; imagine they see frightful objects, and are in great fear; believe themselves to be murderers or criminals who shall be executed; want to run away. Staring look; twitching of the muscles of the face and mouth; lockjaw; tremor. Reduced subjects.

Stramon., frightful visions of animals which appear to jump up at his side; imagines one half of his body being cut off; hallucination of hearing, as if on the right side of the occiput a loud voice were abusing and insulting him; wants to run away; uses wrong words when talking; glistening, staring eyes, with enlarged pupils; tremor of all the limbs.

Tart. em., after excessive drinking of young persons; gnawing pain in the stomach.

Zincum, great fear, as if persecuted by men or the devil, on account of crimes which he has never done; is afraid of becoming imprisoned, or poisoned, or shot, or buried alive, with great excitation, pappy taste, whitish coated tongue, eructations, loss of appetite, retarded stool, vertigo and heat in head and face.

Chronic Alcoholism; Dipsomania.

It is without exception the consequence of long-continued and continuous abuse of spirits, and although persons of this category are seldom seen in a state of actual drunkenness, still their whole system is shattered and shaken to its very foundation. They lose their character; their craving for drink overrules their best intentions, they continually struggle with temptation and yield continually to it; they feel themselves in a continuous conflict and dissension with their own better selves, and gradually fall in a state of deep melancholy and suicidal tendency from which

only a fresh resort to their one remedy, whisky, liberates them for the time being. And as they grow from bad to worse, the higher they stood, the lower they fall, until at last they do not shrink from committing crimes in order to gratify their ungovernable craving.

Dipsomania occurs in the form of a repeatedly recurring rage for drinking, which often is preceded by unpleasant sensations in the lower part of abdomen, nausea, vomiting, want of appetite, general depression, gone feeling all over, and trembling sensation about the heart. This condition often terminates in an attack of madness.

The psychical degeneration, which differs in different patients, produces varied forms of insanity: sometimes forms of exaltation with changing and absurd delusions, sometimes forms of melancholy with religious mania, delusions of persecution, and sometimes mere tranquil dementia. Besides these psychical disorders we find others affected with different degrees of paralysis of motion and sensation. *Paralytic dementia* is one of the commoner terminal diseases of chronic alcoholism, as also apoplectic and epileptic attacks occasionally occur during its course. In some patients color-blindness of green and bluish-green, amblyopia and amaurosis in various degrees with atrophy of the optic nerve has been observed. The chief ailment, however, is a chronic gastric catarrh, which makes digestion almost an impossibility and interferes entirely with the general nutrition of the body. We therefore find the liver almost always affected, ending in cirrhosis; the kidneys suffer with morbus Brightii, and some patients die with anæmic symptoms. The sexual functions are at first little affected; in one case, I know of, the sexual desire is almost hightened to satyriasis; in the later stages, however, sterility attacks both sexes. The children of alcoholic parents exhibit very often a predisposition to psychical disorders and inherit a badly constituted nervous system. Children begotten in drunkenness are said to be epileptics from their birth.

The post-mortem appearances vary greatly; there have been found: pachymeningitis hæmorrhagica; atrophy of the cortical substance; fatty degeneration of the ganglionic cells, of the voluntary muscles, of the heart, liver and kidneys; thickening of the coats of the veins; thickening of the mucous membrane of the stomach and sacrum; flat erosions, hyperæmic vessels and increased pigmentation of the mucous membrane of the stomach;

granulated condition due to interstitial development of increased connective tissue or cirrhosis of the liver.

THERAPEUTIC HINTS.—Confirmed drunkards are no doubt hard cases to manage. Some we will not be able to reform, unless we can take them entirely out of their wonted associations and submit them to moral treatment; others probably may be approached if we succeed in producing in them a disgust for whisky, and accustom them to the use of milk as main diet. Still others, perhaps all, will be relieved of many of their symptoms by a careful selection of one or the other of the following remedies.

Angelica, in 15 drop doses of the tincture, three times a day, has caused disgust for liquor.

Amm. carb. et caust., in nervous, torpid asthenic cases; in periodical hallucinations; in amblyopia.

Arnica, during the delirium, when he imagines that he will be arrested; also when after the cessation of trembling, formication and subsultus tendinum there still remains a weakness or sense of being asleep of the whole muscular system, slowness of comprehension, ringing in the ears or fog before the eyes. Taken in the first dilution, it has also caused a decided disgust for liquor.

Arsen., cachectic paleness; habitual redness of the conjunctiva; sudden loss of strength; anxiety in pit of stomach; great restlessness; affections of the heart; oppression of the chest, even suffocative spells, especially on moving and at night; emphysema of the lungs; dry cough, or difficult, tough expectoration. Nausea and vomiting; great thirst; tongue dry and intensely red at least on point and edges, or whitish coated; watery diarrhœa, worse after midnight. Tobacco chewers.

Carb. veg., digestive troubles, with burning in stomach; heartburn, acidity, belching of rancid taste, all worse after eating; retarded stool, hard and insufficient; cachectic paleness of face; chilliness.

China, lienteric diarrhœa; dropsical affection; exhaustion.

Ferr. met., earthy paleness of the face, or bloated face, easily reddening; roof of mouth always pale. Vomiting of food undigested; hydræmic conditions.

Kali bichr., especially in complaints of beer-drinkers.

Kali brom., headache, with dizziness; staggering as if intoxicated; stupefaction; sopor; muscular weakness; anæsthesia of

pharynx and velum palati and external skin; sight weakened and hearing impaired. Gastralgia; vomiting; colic; constipation.

Kreos., habitual vomiting of undigested food; of large quantities of sour, acrid fluid, or of white, foamy mucus; diarrhœa profuse, colorless, or greenish watery, fetid.

Laches., worse in the afternoon or after sleep; constant talking and jumping from one subject to another; cannot bear anything tight around the neck; great weakness; tremor of hands; liver affections.

Natr. mur., hypochondriacal melancholy; headache (migraine); thin, nervous individuals prone to outbursts of passion; craving for liquor; digestion easily disturbed by slight dietetic or mental causes, with furred tongue, or map tongue; great thirst; slow digestion; vomiting of clayey substances; stool hard and retarded; venous congestion of liver, pancreas and uterus; fluttering of heart; cutting pain in urethra after urination.

Nux mosch., dulness, heaviness and pressure in the head; dizziness and sleepiness; heavy sleep, with clairvoyance and performance of accustomed work without any recollection when awaking; mind absent, knows not where he is or what to answer; dryness of skin, nose, mouth and throat; flatulency; retarded stool, or diarrhœa; liver troubles; strangury after beer; dyspnœa; chilliness. Worse from cold and damp air.

Phosphor., great mental and physical exhaustion; trembling of the limbs when trying to use them; jerking of single muscles; arms powerless, legs paralyzed; vertigo, with loss of consciousness; indifference even towards the dearest friends; forgetfulness and stupidity in a measure that the patient does something else than what he intended; monomania de grandeur et de la richesse; idiocy. Inclined to diarrhœic stools and flatulency; dry, scaly skin. Worse in cool and damp weather.

Pulsat., is a better antidote to whisky than even Nux vom.

Selen., craving for liquor. When Sulphur seems indicated and does not help.

Sulphur, very important for many complaints as its known symptoms of the head, stomach, intestinal canal, liver and kidneys abundantly show.

Sulph. ac., vomiting in the morning; acidity of stomach; burning in œsophagus and stomach; sour, acrid or foul eructations. It has been successfully used in subduing the craving for liquor

by taking for two or four weeks, daily three times, from 10 to 15 drops of Acid. Halleri, which is a mixture of one part of sulphuric acid with three parts of alcohol.

Tart. em., gastric catarrh, with great uneasiness in the stomach; nausea and vomiting of tough, slimy and bilious matter; watery diarrhœa in small quantities; fulness of pit of stomach and abdomen, with pressure as of stones; great thirst; loss of appetite, even disgust for any nourishment; tongue moist and whitish coated; bad taste and frequent eructations. Bronchial catarrh, with mucous rattling, tough and difficult expectoration; oppression of the chest necessitating the patient to sit up in bed.

Opium and Morphine-Poisoning.

The habitual use of opium has in thousands of cases been brought about by the criminal ignorance and recklessness of physicians, who know not what they are doing, when they prescribe laudanum or morphine for any and every little pain, or use it as hypodermic injections. The habit of opium eating has so alarmingly increased, that it is necessary to mention here also this artificially induced misery of frail human nature. It is not necessary to go into the details of Opium symptoms; they can be found in our provings. Its chronic effects may be summed up in the following: "General emaciation, pale, shrivelled complexion, dry skin, looking like fish-scales, relaxation of the muscles, failure of appetite, disturbed digestion; at the commencement obstinate constipation, followed later on by dysenteric diarrhœa. Superadded are fanciful, discontented temper, giddiness, headache, sleeplessness, all possible eccentric neuralgias, failure of memory, understanding, energy and will; patients become untrustworthy and are very regardless of truth, especially when they are questioned about their habit; also paralysis and diseases of the bladder." All this is gradually produced by the direct influence of opium upon the substance of the nerves, and it is therefore in accordance with the nature of opium-action, when post-mortems do not show any particularly characteristic anatomical changes. Hyperæmia of the brain is most constant; sometimes an accumulation of fluid is found in the subarachnoid spaces and in the ventricles; sometimes, also, sanguineous effusions of greater or less extent in different parts of the brain. The bladder is generally found distended. All other anatomical conditions seem accidental and not due to opium-poisoning as such.

THERAPEUTIC HINTS.—In acute poisonings the stomach-pump is a safer and surer means to remove the poison than any of the usual emetics, because the latter often fail to produce vomiting on account of the insensibility of the nerves of the stomach caused by opium, and also because the patient escapes by its application a possible gastritis, which often follows the administration of Tart. em. and other irritant substances. By its means the stomach can be washed out with green tea, coffee or sage tea, by which a less poisonous compound (tannate of morphine) is formed. In order to prevent complete narcosis it is well to make the patient walk about for hours, or to apply painful stimulation to the skin, the cold douche-bath and the like. After sopor has set in, the walking about forbids itself; we ought, however, conduct as much fresh air to the face and head as possible. In this state injections of a tea of oats have been recommended.

Bellad. is no doubt the best antidote against acute poisoning. Even the old school acknowledges it and uses hypodermic injections of Atropine.

Chamom., when after abuse of morphine to lull pain, sleeplessness ensues and the suffering grows intolerable notwithstanding.

Ipec., only lately shown as efficient for the cure of the habit of opium-eating. Fifteen drops of the tincture were given at a time until improvement set in.

Nux vom., often indicated in cough and diarrhœa after previous use of so-called cough and diarrhœa mixtures, all of which most generally contain opiates.

Tumors of the Brain and its Membranes

Consist of morbid growths in the connective and epithelial tissues of the blood-vessels and their sheaths, which either retain the character of the affected tissue, or become altered by modification of the newly-formed elements and by changes in their relations to the connective tissue and vascular distribution.

Their CAUSES seem to be a hereditary predisposition, abuses of spiritual drinks, blows and falls of all kinds, syphilis and tuberculosis. They occur much more frequently in men than in women.

Tumors which retain the character of the affected tissue, are:

Glioma, formed by proliferation of the neuroglia, greatly re-

sembles normal brain tissue, and is therefore not easily distinguishable; when it assumes a more mucous character, it is soft and closely resembles *myxoma;* when its structure is harder, it resembles and is allied to *sarcoma.* It grows slowly, may finally undergo fatty degeneration and is found usually in the white substance of the cerebral hemispheres and especially their posterior lobes.

Hyperplasia of the pineal gland presents a solid, grayish-red, slightly lobulated or else smooth, round tumor, which may grow as large as a walnut or even larger; its histological elements are somewhat larger and firmer than in the normal.

Psammona or **sand tumor** is an inflammatory proliferation of the cellular tissue in which a calcareous deposit takes place; it usually grows from the dura mater commonly at the base of the skull, is a hard, hemispherical tumor, white and smooth and of the size of a cherry-stone.

Melanoma takes its origin in the pigment cells of the pia, is small in size, but may be multiple; is of rare occurrence.

Neuroma, a genuine hyperplasia of the gray substance, occurs in sizes from a millet-seed to that of a pea and is found on the ventricular surface, in the white substance, or on the outer surface of the brain.

Hyperplasia of the anterior half of the pituitary gland.

Cysts may be the result from apoplectic effusions, abscesses and softening.

Aneurisms are of frequent occurrence, especially upon the large vessels at the base of the brain, and usually in consequence of atheroma; when bursting they cause fatal apoplexy.

Cholesteatomata consist partly of hardened epithelial cells and partly of epithelial cells which have undergone fatty degeneration; they unite, as Rindfleish says, "the structure of an epithelial carcinoma with the harmlessness of a wart or weal." They are generally found in some hollow at the base of the skull or in some recess of the brain.

Tumors by which the affected tissue is changed in its character, are:

Tubercles, gray, yellow, or yellowish-white, hard tumors, which frequently grow larger than a hazel-nut; their favorite position is the gray substance, especially of the cerebellum; they occur most frequently in childhood. Miliary tubercles are a frequent concomitant or source of meningeal inflammation.

Carcinoma appears usually as primary fungus hæmatodes on the outer or inner surface of the dura. When starting from the outer surface it rapidly softens and pierces the skull bones and then spreads on the external surface of the skull (fungus duræ matris); when originating on the inner surface its growth is entirely directed towards the brain; it never penetrates the dura, except at the natural openings for the nerves, such as the olfactory, optic, etc., hence the growing in and out of cancers in the orbits on the perforated plate of the ethmoid bone, in the sphenomaxillary fossa and so on.

Sarcoma is either a hard, dense, homogeneous mass, which can easily be detached from the surrounding tissue, or is of a soft, medullary consistence, which constitutes a transition to a myxoma or glioma.

Myxoma forms a very soft gelatinous mass, which frequently breaks down into cysts containing a mucous fluid; they may attain the size of a man's fist, and are met with only occasionally in the cerebral hemispheres.

Syphilitic tumors are not common; they generally resemble the gummata of other parts, being composed chiefly of greyish semi-translucent matter, which is liable to become opaque and crumbling on undergoing a caseous transformation.

Symptoms.—One should suppose that the pressure of any of these tumors should manifest itself more or less by various outward symptoms. But this is not always the case. Large tumors have been found post-mortem, and not a single symptom did betray them during life. It is remarkable how the system, even the brain, may become accustomed to an abnormal growth, when it is invaded slowly. Yet there are symptoms in many cases which should rouse our suspicion in this direction. They are: "Depression of spirits, melancholy, rarely maniacal attacks, mental derangement, aphasia, sleepiness; amblyopia and amaurosis, with the appearance of choked disk and neuroretinitis; inequality of the pupils; strabismus; violent headache, often accurately localized; monolateral anæsthesia, usually in the form of anæsthesia dolorosa; neuralgia; monolateral paralysis of varying degree, gradually increasing; jerking, quivering; cramps of the affected groups of muscles, developing sometimes into epileptoid attacks." Further on: "imbecility; total want of energy; sopor, comatose condition; wide-spread anæsthesia; very hesitating speech; paraplegia; incontinentia urinæ et alvi, or else reten-

tion; increased temperature of the body; symptoms of meningitis; apoplexy."

Glioma is to be thought of when there is: "preceding considerable injury of the skull; slow progress of the symptoms and hence relatively long duration of the illness; intercurrent apoplexies; good state of nutrition."

Tubercular tumors, when there is "a hereditary predisposition to tuberculosis; occurrence in childhood; tuberculosis of other organs; commencement of the symptoms after acute febrile diseases, for instance, measles; complication with meningitis."

Carcinoma, when there is "a rapid progress of the symptoms; perforation of the bones of the skull; carcinoma in other organs."

Notwithstanding all this, the DIAGNOSIS of brain tumors will in many cases remain problematic and is often impossible.

THERAPEUTIC HINTS.—Little can be said. In all cases we must be governed by the totality of the symptoms, even if we should suspect a tumor.

When a considerable injury of the skull has preceded, we will have to choose a remedy accordingly.

When tubercles are suspected, compare what has been given under meningitis tuberculosa.

In case of carcinoma, compare: Calc. carb. or phosph., Arsen., Carb. an., Bellad., Laches., Phosphor., Silica, and many others.

DISEASES OF THE CRANIUM AND ITS INTEGUMENTS.

a. ABNORMAL LARGENESS OF THE HEAD

May be caused by *hydrocephalus, hypertrophy of the brain* and by *pseudo-formations within the cavity of the skull, when they perforate the skull.* To this are to be added morbid conditions of a more external nature.

Dropsy of the Scalp.

This is a collection of serum either in the *cellular tissue* (cellular dropsy) or *between the aponeurosis and the pericranium* (apo-

neurotic dropsy). When the watery fluid collects in the *cellular tissue*, it is apt to spread down to the face; and on pressure with the finger it leaves a pit; as is seen on all parts of the body, where dropsical effusions exist within its cellular tissue. When it is *underneath the aponeurosis* or the *galea capitis*, the swelling is tight, elastic, fluctuating, and leaves no pit on pressure, and never spreads over the ears or eyelids, and this for obvious anatomical reasons.

Both forms exist without cerebral symptoms, and may be the consequence of either a general dropsical condition, or of erysipelas, external injuries, stings of insects, eruptions, and so on.

Hypertrophy of the Skull.

This may either involve a *part* only of the cranium, in which case it forms *exostosis* or *bony protuberances;* or the *whole skull*, whereby the bony walls may attain a thickness of one inch and a half. Both forms cause an enlargement of the head, and are mostly found as a concomitant to rhachitis or syphilis. When they grow from the inner plate of the skull, they do not cause an external enlargement of it, and are therefore not recognizable with any degree of certainty.

The Bruised Head of a Child after Birth,

Caused by the pressure during birth, is either *an extravasation of lymph or blood into the cellular tissue;* in which case it is called *caput succedaneum;* or it is *an extravasation of blood between the bones and the pericranium*, causing the affection called *thrombus neonatorum.*

The **Caput succedaneum** may extend over the fontanels or sutures of the bones; it may even be formed on any part of the head sufficiently exposed to a great pressure of the pelvis, or the forceps, during labor. It has a soft, doughy feel, and the outer skin looks bruised.

The **Thrombus**, however, is confined generally to the parietal bones, and never extends over the sutures of the bones, because there the pericranium adheres firmly to the skull. It feels elastic and fluctuates, and shows no discoloration of the external skin.

Both forms are in their nature bruises, and ought to be treated, should treatment be necessary at all, like bruises. *Arnica* will

usually do what is required; in some cases, however, Bar. mur. and Mercur. have been successfully applied.

b. ABNORMAL SMALLNESS

Of the head is found in idiots. It may be partial or general, congenital, or caused after birth, before ossification is completed. Always, however, it will be found in connection with an imperfect development or derangement of the brain.

c. AFFECTIONS OF THE SKULL WITHOUT ENLARGEMENT.

The cranium consists of two tables, which run parallel with each other, and are separated by an intermediate cellular structure, which is called diploë. The whole, however, consists of eight different bones, which are connected to each other by sutures. Before these sutures consolidate, there are, of course, on those places where different bones are to meet, larger or smaller openings, which are called *fontanels*. At the time of birth, however, as a general thing, only one of these fontanels exist, and that is the *anterior opening*, whilst the *posterior* and *parietal* openings have already closed.

The *anterior fontanel* closes normally in the second year of life. If it stays open much longer than two years, it shows a want of proper nutritive action in the system; if it *grows larger*, dividing the frontal bone and parting the parietal bones, it is a sign of chronic hydrocephalus, or of hypertrophy of the brain. If you lay your hand softly upon it, or watch it closely, you will observe a constant motion up and down, a kind of breathing of the brain. *Screaming* or *coughing* causes momentary distention and protrusion of the integument over it. If, however, as in cases of meningitis, this opening *swells out permanently*, it is a sign of *exudation* of serum in the brain. Its *suddenly sinking in* denotes a *collapse of the brain*, which is soon followed by death. In like manner, the *posterior fontanel*, by a morbid process of absorption of the already-formed bony substances, may reopen; or several holes may form near by—the bony structure withering away gradually, leaving only the integuments. This is called the **Soft occiput** or **Craniotabes.** It has been observed mostly towards the end of

the first year, especially in children of rhachitic or scrofulous parents. It is doubtless a deep-seated, constitutional disorder, and can be successfully treated only by a careful study of all the symptoms. Nevertheless, **Sulphur, Calc. carb., Calc. phosph.** and **Silic.** might often be indicated. If not checked, it frequently becomes complicated with meningitis, or pneumonia, or tuberculosis and diarrhœa, which soon end the scene.

To this I may add—

Atrophy of the Skull.

This may be a consequence of internal pressure from carcinoma within the cavity of the skull, which may even perforate the cranium; or from hypertrophy of the brain; all of which have already been mentioned.

We also meet with *inflammation of the skull* or *ostitis*, with all its sequelæ—*caries* and *necrosis*—which is mostly of a syphilitic or tuberculous origin, or is caused by external wounds badly treated.

THERAPEUTIC HINTS.—Caries call for **Asaf., Calc. carb., Calc. phosph., Fluor. ac., Pulsat., Silic., Sulphur,** and other remedies.

d. DISEASES OF THE INTEGUMENTS.

The integuments of the cranium consist of the following five different layers:

1. *The external skin* or *derma* is covered thickly with hair, and contains innumerable *sebaceous* and *sudoriparous* glands, of which the former secrete an oily, fatty substance, and the latter are the organs of perspiration.

2. *The subcutaneous cellular tissue*, in which the net-work of the larger blood-vessels and nerves lies imbedded, and which conjoins the derma to

3. The *aponeurosis;* which is expanded tightly over the cranium Under it is found—

4. *The second cellular tissue,* which consists of loose mashes and connects the aponeurosis only loosely with

5. *The pericranium*, which is the immediate covering of the bones, and which, although very thin, is nevertheless of great strength. It transmits numerous blood-vessels into the bones.

In diseases of the scalp, all or single of these different layers may be affected.

Erysipelas of the Scalp and Face.

Erysipelas is an acute febrile disease, characterized by a peculiar inflammation of the skin and enlargement of the neighboring lymph-glands, which is accompanied by more or less severe general symptoms. It is contagious and inoculable, and arises spontaneously under conditions not accurately determined; in the latter case it is called **Idiopathic.** When spreading by its own contagion which diffuses itself through the air or is carried by linen or instruments previously used for dressing patients with erysipelas, or by flies—it is called **Traumatic,** and is mostly found in the surgical wards of hospitals. As the slighest scratch may be the recipient of the poison, the disease is often communicated to nurses and physicians. Recent writers on this subject do not make any distinction between these two forms, and assert that the idiopathic form also arises from some insignificant injury, which only could not be discovered! This is driving the desire for simplification rather too far. There are a number of cases especially on face and scalp which arise without any scratch or wound, and under conditions where infection is entirely out of question. In fact the whole complex of symptoms shows that it is not a local but a constitutional disease in no less degree than measles, scarlatina and other febrile diseases. Da Costa in an excellent treatise on the internal complications of acute erysipelas (*American Journal of the Medical Sciences*, Oct., 1877, p. 321, etc.) admits as much, and also prints a whole series of cases observed by himself, in which he found that the idiopathic form was almost invariably attended by albuminuria, which in the traumatic form was either entirely absent or present only in a decidedly less marked degree. Hahnemann considered erysipelas as one of the acute outbursts of a psoric taint. He was probably correct even in this. "Erysipelas, like phlegmonous inflammation, affects the skin in its whole thickness and the subcutaneous cellular tissue. All the layers of the corium and of the subcutaneous cellular tissue are œdematous, swollen, and penetrated by large, finely granulated, white blood-corpuscles. The meshes of the connective tissue in which these cells are embedded are very dedidedly separated by them and by the fluid

which uniformly permeates the tissues. The most important distinctive feature of erysipelas is its disposition to spread only by creeping uninterruptedly onwards without making jumps," or as Billroth has it, "it spreads like water in blotting paper." When on the scalp or face it is limited mostly to a more or less extensive portion of the skin of the head and face and seldom descends over the neck to the trunk; on other parts of the body it is apt to spread over larger surfaces.

Its local SYMPTOMS are frequently preceded a day or two by a feeling of general malaise, chilliness and feverishness. Then the part affected begins to feel hot and tense; the skin reddens and swells, and becomes very sensitive to the touch. At the same time the adjacent lymphatic glands commence to swell. The inflamed portion assumes a red, smooth and shiny appearance, which is, however, darker and duller on the scalp than on other parts, and to the touch it gives the impression of a hard, stiff, caked mass. The inflammation gradually creeps on until it reaches from side to side of the scalp, down into the face, and even to the neck and shoulders.

On the second or third day, generally, the redness and swelling reach their height, and, at this stage, in some cases, the epidermis becomes raised and filled with a yellowish, limpid fluid, sometimes tinged with blood, in the shape of large blisters—**Erysipelas bullosnm**—which either dry up, or burst and become covered with crusts.

During the height of the disease, the patient has high fever, with evening aggravations; his sleep is restless and full of dreams; he sometimes becomes delirious. On the fourth day the redness and swelling gradually subside on the places first attacked; while those parts which were invaded later stand yet in full bloom. By-and-by, however, they grow paler, softer, and assume a wrinkled appearance, as the swelling leaves; the crusts dry off, and on the whole surface the epidermis peals off in large flakes; the entire process lasting from about eight days to two weeks.

But this is not invariably its course. Just in its very nature, to creep on, lies its danger. It may, by continuity of tissue, wander to the mucous membrane of the nasal and pharyngeal cavities, cause an œdema of the glottis, and affect the larynx, the bronchial tubes, and even produce pneumonia and pleuropericarditis.

An extension of erysipelas to the meninges (erysipelatous men-

ingitis), or to the brain tissue (cerebritis) which, on account of the violent brain symptoms, in former days was supposed to be the cause of death in many cases, has by later observers not been found, even though numerous post-mortems of typical cases have been instituted in search for it. Da Costa found only "some fulness of the vessels of the membranes, a kind of venous turgescence, yet not extreme," but no sign of any kind of inflammation. An explanation of the violent brain symptoms has been variously tried—the assumption of blood-poisoning, as in other exanthematic fevers, is probably the most rational.

The tongue usually is covered with a white creamy coat, which dries gradually, becomes dirty yellow and, when the fever is protracted, blackish and crust-like; there is nausea and vomiting; sometimes diarrhœa and, what seems very remarkable, in rare cases profuse intestinal hæmorrhage, in consequence of ulcers in the duodenum, which generally have proved fatal, and remind one of similar symptoms which are occasionally observed after severe burns of the skin. In almost all idiopathic cases there is albuminuria. The fever, accompanying erysipelas, is characterized by a sudden rise of the temperature to even 104° F. or higher often within from 8 to 12 hours, still rising to 105.8° and in some cases to 107.6° F. Exceptionally, however, the temperature shows periods, even for the length of a whole day, of marked depression, after which again a sudden rise takes place. When recovery approaches, it usually sinks as rapidly as it rose, and may attain its normal standard within a few hours or in a single night; then desquamation of the epidermis, in the form of large or branny scales, and wrinkling of the skin terminate the local process. However, even after this in some cases a renewed sudden rise of temperature has been observed. The hair usually falls out, but quickly grows again. The skin too recovers its normal state; only upon the eyelids, the scrotum, the prepuce and vulva, where it is naturally tender, it may in severe cases undergo a more or less extensive gangrenous destruction, and its duration be prolonged to several weeks, even months.

Unlike to other infectious fevers, erysipelas leaves a very great susceptibility for renewed attacks. Not a few persons are subject to a periodically returning form—the so-called **Habitual erysipelas**, which mostly affects the face or lower extremities.

The nature of its contagium is not all known; it seems, however, to possess great tenacity.

The PROGNOSIS of erysipelas is favorable, as long as it does not spread to internal organs.

THERAPEUTIC HINTS.—The external application of raw cotton to the inflamed parts, to keep off the air, as in burns, I have found decidedly beneficial. The terrible itching is sometimes alleviated by the application of rye-flour.

Apis, spreading down to the face with great œdematous swelling of the eyelids, forming reddish, watery bags under the eyes; stinging, pricking, burning; smooth or blistered; thirst or no thirst.

Bellad., especially *right* side; eruption smooth, shining, streaked, of bright red color; brain symptoms prominent; sometimes nausea, gagging, wretching; or coughing; drowsy but cannot sleep.

Borax, mild form; left side; painful when laughing with sensation as if covered by cobwebs. (Bönninghausen.) Pale, red œdematous swelling from left lower eyelid down to cheek; anxiousness; childbed; after Apis and Rhus tox. had failed. (Fellger.)

Euphorb., highly prized by Dr. H. Boskowitz. It helped after Graphit. had failed. (W. E. Payne.)

Hydrast., wandering from left side of nose to right over whole face and scalp; intense pain in the lumbar region; chills down the back; extremely restless; disturbed by noise; delirium; urine suppressed.

Laches., purplish, leaden hue; tongue dry, glossy, tremulous; visions, and delirious talk as soon as he shuts his eyes; aggravation from noon till midnight.

Pulsat., the ears are especially affected; during damp, wet weather.

Rhus tox., vesicular form; spreading from left to right; burning and itching; nasal and pharyngeal cavities inflamed; great restlessness; pain in back and limbs, worse in rest; after getting wet.

Ver. vir., right side of head and face much swollen and covered with large blisters; headache; high fever; no sleep; no appetite; intermitting attacks of nausea; occasional vomiting of the water drank. It was applied low, externally and internally. Still other remedies may be indicated.

Arsen., irregular progress; disposition to internal organs; terrible restlessness and sinking of strength; fainting; pain in

the bowels and hæmorrhage, as sometimes occurs in large burns.

Camphor., great exhaustion; coldness of skin; breathing scarcely audible or visible. Bönninghausen has recommended it for the initial symptoms, low and frequently repeated.

Canthar, large blisters, irritable and burning; after Rhus tox. had failed. Post-erysipelitic chronic prickling of the skin.

Chamom., suppuration of the cellular tissue; low externally and internally.

Crot. tigl., œdematous swelling of eyelids; large and small blisters; intermediate skin cracked and peeling off; violent burning.

Cuprum, sudden sinking of the swelling and changing into a bluish color; violent brain-symptoms.

Graphit., tendency to repeated attacks of erysipelas bullosum; also when new aggravations come on during the same attack; constrictive headache in occiput; perspiration does not relieve. Habitual erysipelas, often alternating with tettery eruptions.

Ipec., retrocession of eruption, with vomiting.

Kali carb., from right to left side; œdematous swelling under the eyebrows. When touched ever so slightly on his feet, he jerks them up much frightened; he talks of pigeons flying in the room, which he tries to catch with his hands; he gets regularly worse about 3 o'clock A.M. After previous attacks.

Sulphur, psoric taint; helps often when all others fail; habitual form.

Phosph. ac., traumatic form, where the periosteum is affected.

Ruta, in combination with wounds.

Silic., when the bones are injured.

Gangrænous destruction, hints to: Arsen., Carb. veg., Cinchon. and Sec. cor.

Schüssler recommends **Natr. sulph.** for the smooth form with or without vomiting of bile, and **Kali mur.** for erysipelas bullosum.

Eczema Capitis, Humid Tetter or Scald.

"A non-contagious affection, characterized by the eruption of minute vesicles in great numbers, and frequently confluent, upon a surface of irregular form and usually of considerable extent. The vesicles are so closely aggregated in some situations as to give rise to one continuous vesicle of great breath." (Wilson.)

They dry and form thin scales, or else break and discharge a

watery or milky fluid of different consistencies, which, by concreting, give rise to thinner or thicker crusts. It is acute and chronic in its nature, and may appear on any part of the body. According to its appearance, location, or severity and obstinacy, it has received a variety of names, which gives a nomenclature most remarkably confused and confounding. It is called *ekthema, porrigo, tinea* with various adjectives, and, if chronic, *psoriasis.* In order to simplify the whole, we will just remember, that *eczema* exhibits the following characteristics: *It is a vesicular eruption, in clusters, often confluent, discharging limpid or turbid and milky fluid, which forms crusts of different thickness, is acute or chronic, mild or severe, situated here or there.*

It may be confounded with

Impetigo,

Because its appearance so closely resembles this latter as to force upon the mind the impression that they are the same disease. And, indeed, *impetigo*, derived from *ab impetu*—a bursting forth with violence—is nothing but a *pustular eczema;* so that, in order to distinguish between the two, we must know what is a *vesicle* and what is a *pustule.* By *vesicle* is understood a very small blister, containing a transparent, limpid fluid; a *pustule* means a pimple, containing pus. The difference between eczema and impetigo lies then in the *pyogenetic* (that is, pus-forming) character of the latter. If both are found together, covering large patches on the scalp, their distinction is quite difficult, unless we say: the hardened coverings of the excoriations of *eczema* are *thin scabs,* because growing out of a limpid, thin fluid—*lymph;* while those of *impetigo* are *tense and thick, greenish-yellow, or brownish crusts,* on account of their being formed from pus.

THERAPEUTIC HINTS.—**Calcar., Lycop.**, when the eruption yields a thick and mild secretion.

Arsen., Natr. mur., Rhus tox., when it looks angry, excoriated.

Baryt. carb., Graphit., Natr. mur., Rhus tox., when it causes falling out of the hair.

Lycop., Psorin., when it smells very badly and causes lice.

Natr. mur., when situated on the boundaries of the hair on the nape of the neck.

Clemat., Petrol., when on the neck and occiput.

Hepar sulph., when the eruption itches worse in the morning, when rising, with burning and smarting after scratching—likewise after external application of salves.

Clemat., Graphit., Hepar sulph., Lycop., Natr. mur., Rhus tox., Staphis., Thuya, for moist eruptions.

Arsen., Calcar., Mercur., Sepia, Silic., Sulphur, for dry crusts.

Mercur., when the lymphatic glands are inflamed.

Baryt. carb., when the lymphatic glands are swollen and painless.

Arsen., nightly burning and itching, relieved from external warmth.

Baryt. carb., falling off of the hair; glandular swelling on the neck and under the lower jaw.

Bromium, eruption covering the scalp like a cap; oozing profusely and smelling badly; cervical glands swollen.

Calc. carb., during teething; scrofulous habit, swollen glands of the neck; burning worse after washing; small wounds suppurate easily; sweat after eating or drinking anything warm; worse about new moon.

Cicuta, thick yellow crusts.

Clemat., the eruption looks angry and inflamed during the increasing, and is dry during the decreasing moon.

Crot. tigl., vesicles and erysipelatous inflammation around the crusts; itching, and burning after scratching.

Graphit., eruption with sticky secretion; causing falling out of the hair; commencing behind the ears and spreading over the scalp and face, especially on chin; chronic lachrymation; fluor albus; worse after washing.

Hepar, especially back part of head; itching; worse in the morning; falling out of hair and leaving bald spots; crusts dry on some and moist on other places with inflamed surface and pus underneath; hard, knotty pimples like small furuncles in the face and other parts of the body; scrofulous ophthalmia; enlarged glands on nape of neck; frequent urging to stool and difficult discharge; sour smelling sweat at nights.

Hydrastis, especially on margin of hair in front; oozing after washing; all secretions tenacious, ropy and profuse.

Lycop., crusts with lice between the crevices; underneath oozing of bloody or purulent fluid; badly smelling; sore and moist behind the ears; often eruptions on other parts of the body. Skin dry, raw, chapped and cracked; disturbed sleep with sudden loud screams; emaciation.

Mercur., stinging and burning; surroundings inflame after scratching; salivation and sore gums.

Mezer., eruption dry and scaly, extending over forehead, ears and neck; or thick leathery crusts with pus underneath, matting the hair, and breeding vermin; violent itching, worse in bed and from touch.

Natr. mur., raw surface; the discharge is corroding, eating away the hair, without forming thick crusts. Especially on the boundary of the hair on the nape of the neck.

Petrol., crusts on scalp; soreness behind the ears; tetter on nape of neck, breast and knees; chapped skin; hands and fingers full of bloody rhagades during winter.

Psorin., badly smelling, yellowish, moist crust with lice; terrible itching; sadness; don't want the head uncovered; the whole body has a filthy smell, even after bathing.

Rhus tox., often indicated; the crusts are thick with greenish, fetid pus underneath and fresh pimples on the surroundings; stiffness of neck and swollen glands on nape of neck and axillæ; itching worse at night.

Staphis., crusts are moist, offensive, and itch violently; on scratching the itching is relieved, but appears immediately at some other place.

Sulphur, dry or moist crusts; eruptions, pimples on different places of the body; eyes inflamed with photophobia; face bloated, pale; cervical glands swollen; stool undigested, diarrhœa early in the morning; belly bloated: sleepless nights on account of itching; easily bleeding after scratching.

Viola tric. (Jacea), thick crusts and oozing of profuse yellow fluid, matting the hair together; frequent involuntary urination; the urine smells like cat's urine.

Dandruff

Is an eczema with but scanty exudation, not sufficient to raise the epidermis into vesicles; it merely loosens it, when it dries and peals off in scales. The scalp underneath remains congested, and thus new scales are constantly reproduced. It may extend over the whole scalp even down to the eyebrows, the whiskers and the beard, or be confined to patches only of irregular form and variable dimensions. The most effective remedies against small, brany scales are according to Jahr: **Bryon.**, **Sulphur**, **Calc.**

carb., Kali carb., Arsen., Alumin. For the pealing off of large scales, the same author recommends: Phosphor., Lycop., Sulphur, Calc. carb., Nitr. ac.

Seborrhœa Capillittii.

"The secretion of the sebaceous glands in the fœtus is greater during intra-uterine life than subsequently, and we meet it at birth on the body generally, where it constitutes the vernix caseosa. This abundant secretion continues on the scalp during the first year of extra-uterine life, and if the sebum is allowed to collect there and gather dirt and dust from without, we may have finally crusts several lines in thickness, and the whole hairy scalp may be enveloped in a thick layer of sebum. When the crusts remain for a long time, the seborrhœa is generally complicated with eczema, for the collected mass of sebum decomposes, macerates and irritates the skin, and produces redness and moisture on it. The same disease appears also as thick scales, which cause the hair to adhere to one another in little bundles (psoriasis amianthacea). In adults it forms one of the commonest varieties of scurf, or dry scales, which are formed in large quantities, and in old people it is seen in connection with senile decay. The scalp is for the most part devoid of hair, and covered with a dirty, yellowish-brown, easily removable crust. It may also be a part of syphilis." (Lilienthal's *Skin Diseases*, p. 118.)

THERAPEUTIC HINTS.—These crusts are best dissolved by the application of oil or grease, and afterwards removed by washing with castile soap. The internal use of Sulphur, a dose of a high potency occasionally, corrects the disposition for this abundant secretion. For adults Phosphor., Calc. carb., Natr. mur., Graphit., Vinca min., Mercur., have been recommended.

Favus, Honey-comb Ringworm, Tinea favosa or Maligna, Porrigo favosa or lupinosa,

Is a vegetable parasite, the achorion Schoenleinii. "It used to be classed among the pustular eruptions, because it first appears as a small yellow spot, the sheath of the hair being filled with the fungous growth; but it has no tendency to suppurate. It grows with great rapidity, and forms large, hard, dry crusts,

which have a peculiar mouse-like odor. It is most liable to be confounded with impetigo, but it requires only moderate care to determine whether the crust be *hardened pus* or an *independent growth*. The distinction is based upon the presence or absence of secretion; be the crust of impetigo ever so dry, some trace of purulent secretion is sure to be met with; and if removed by a poultice, the moist, exuding surface cannot be mistaken. Knowing this fact, we have no need to particularize the rounded form, the cracked, broken-looking surface, and all the other characters resembling honey-comb, which the older writers were obliged to enumerate." (Barcley.) The scalp is its most usual place of development, but it is sometimes found upon the nape of the neck, or in front of the ear, and even upon the arms.

"The pathology of favus is best understood by considering it essentially to be a form of abnormal nutrition, with exudation of a matter analogous to, if not identical with, that of tubercle, which constitutes a soil for the germination of cryptogamic plants, the presence of which is the pathognomic of the disease. Hence is explained the frequency of its occurrence in scrofulous persons, among cachectic or ill-fed children, and the impossibility of incubating the disease in healthy tissues, or the necessity of there being scaly, postular and vesicular eruptions on the integuments previous to contagion." (Bennet, Lilienthal's Skin Diseases.) This view is born out by actual *clinical experience*.

Jahr says: "Notwithstanding its parasitic nature it has been cured by the sole internal administration of **Sulphur**, **Calc. carb.**, **Rhus tox.**, and **Arsen.**, and Teste considers the treatment of this affection the triumph of Homœopathy, recommending:

Sulphur and **Dulcam.** for the humid form in children of blonde and fresh complexion.

Viol. tric., in alternation with either of the above when the itching is very violent.

Oleand., when there is intense itching and an insupportable nocturnal burning after scratching; affection of the mesenteric glands with swelling, hardness and tension of the abdomen, and frequently loose and undigested stools.

Hepar sulph., when extending to the nape of the neck or the face; ophthalmia with or without ulceration of the cornea, etc.

Besides compare **Arsen.**, **Baryt. carb.**, **Bromine**, **Calc. carb.**, **Dulcam.**, **Graphit.**, **Hepar.**, **Mercur.**, **Mezer.**, **Rhus tox.**, **Petrol.**, **Staphis.**, **Sulphur**, **Viol. tric.**, under Tinea capitis.

Lapp. maj., grayish-white crust over head, face and neck; swelling and suppuration of the axillary glands.

Phosphor., the skin of the denuded scalp is clear, white and smooth.

Vinc. min., spots on head, oozing, matting the hair together; the hair falls out in single spots, while hair grows on it.

Tinea, Herpes tonsurans, or Ringworm of the Scalp.

The hair falls out in a patch of a circular form, leaving the skin of the head perfectly smooth. It is a microscopic fungus, known as trichophytum tonsurans, that invests the roots of the hair and destroys them.

Cases are reported as having been cured by **Graphit.**, **Phosphor.**, **Arsen.**, **Tellur.**, **Sepia**, and others. Alcohol is said to destroy the parasite.

The Wen

Is an encysted tumor of varying size; from that of a small pea to the size of a walnut, and even a small orange.

"The sebaceous or fatty substance in these sacs or cysts is variously altered in its qualities and appearance. Sometimes it is a lympid fluid-like serum, and contains crystals of *stearine;* at other times it is soft and white, of a pappy consistency; again, it is yellowish, and resembles beeswax. Sometimes it contains epidermal scales and hairs. Sometimes the contents of the cyst are exceedingly fetid; and the fetor is increased when the tumor inflames." (Wilson). Under the pressure of the finger they feel elastic, and are movable under the skin.

THERAPEUTIC HINTS.—Thus far have been successfully applied:

Baryt. carb., **Bellad.**, **Calc. carb.**, **Caustic.**, **Clematis**, **Phytol.**, **Silic.**, **Sulphur**, **Thuja.**

The Teleangiectasia, or Vascular Nævus, Mother's Mark,

Is a dilatation of a portion of that fine net-work of capillary vessels which everywhere pervade the derma, and cellular tissue. Such dilatations may occur in either of them. They form red, easily compressible, flat tumors, of different sizes. They are sometimes stationary, but more frequently increase slowly in size;

and we often find enlarged blood-vessels in their vicinity. They generally appear on the scalp, and still oftener on the forehead, but also on other parts of the body.

THERAPEUTIC HINTS.—Condur., Fluor. ac., Strontian, Sulphur, Silic., Thuja. **Phosphor.**, when they bleed easily.

The Hair.

Alopecia—its falling off—may originate in various conditions. If it consists in a total atrophy of the hair-follicles, the hair of course will never grow again; if it is only a partial atrophy, the hair grows thin. A transient deficiency in the nutrition of the hair-follicles, as it occurs in several illnesses, such as typhoid fever, pneumonia, puerperal fever, chronic headaches, syphilis, does not hinder the hair from growing again, as soon as these disturbances have passed away.

The **Alopecia circumscripta** or **Porrigo devalcans** has its cause in a parasite, the *microsporon audonini*, which attacks the hair in isolated patches, and the denuded spots are left clean and polished and of a marble whiteness; it is not considered as contagious.

Alopecia in consequence of erysipelas, seborrhœa and different eruptions of the scalp, disappears after these disturbances are healed.

Cosmetic means also may bring on alopecia.

Baldness is more or less an attribute of old age; it is found oftener in men, than in women; it also is seen in younger individuals in consequence of hereditary disposition.

THERAPEUTIC HINTS.—**Kali carb.**, **Natr. mur.**, with great dryness of the hair. Carb. veg. after Kali carb.

Hepar sulph., **Phosphor.**, **Sepia**, **Silic.**, after chronic headaches.

Kali carb., **Nitr. ac.**, after nervous fevers.

Phosph. ac., after great anxiety and grief.

Besides these compare Ambra, Amm. carb., Baryt. carb., Calc. carb., Conium, **Fluor. ac.**, Graphit., Lycop., Natr. mur., Sulphur, Zincum.

For bald patches: **Aloes**, **Arsen.**, **Phosphor.**, **Vinca minor.**

The cutting of the hair is often attended with great effect upon the general system. *Colds in the head* are a very frequent consequence, and in children even *spasms* may result therefrom. But

there are also cases on record where it proved beneficial to patients, relieving them of headache, and in one case even from a sort of mania.

The changing of color into gray and white is usually a process of age; but grief, sorrow, and worriment may bring it on much before its time, and sometimes in a very short time. There are a number of cases related where this change took place during one night in consequence of terror, or other violent emotions of the mind, so that the poet says: "O nox! quam longa es, quæ facis una senem!" But of late, these instances have been doubted, because they are not well authenticated. However that may be, so much is certain, that strong mental emotions have a great effect upon the discoloration of the hair.

THERAPEUTIC HINTS.—Bad consequences of cutting the hair are mostly removed by **Bellad.** or **Bryon.**

The process of growing gray and white we best leave undisturbed, unless we choose remedies for its next causes. All of the so-called cosmetic means are hurtful, sometimes dangerous; and the vain will be punished for his vanity.

The Plica polonica—matted hair—as is here and there found in Poland, is, according to Hebra, an *eczema* of the scalp, forming crusts, and matting the hair together in a most hideous manner.

EYES.

Considering the eye as a whole, we find its general appearance frequently altered by disease. Without dwelling upon the language which the mental emotions—fright, terror, joy or sorrow, love or hatred—speak through them, we observe:

An unnatural lustre of the eyes in fevers; and

A brilliancy in consumptives.

Glassy eyes are characteristic, in children, of inflammation of the mesenteric glands; and, if accompanied with dark, dry lips and tongue, dry skin, and great restlessness, of an acute inflammation of the stomach. In fevers they indicate great danger, or critical changes.

Dull eyes are frequently observed in febrile conditions of the system; during catamenia, in catarrhal and other affections.

Sunken eyes are the consequence of an absorption of the fat cushions, whereupon the eyeballs rest and turn in their sockets. This takes place in all diseases which are accompanied with great loss of blood or other vital fluids.

Exophthalmus or protruding eyes, when not congenital, is a characteristic sign of Basedow's disease.

In treating the particular *diseases* of the eye, I shall condense in a small space what is important for the general practitioner in his daily practice; the specialist will necessarily have to consult special works on this subject.

LIDS AND LACHRYMAL APPARATUS.

Inflammation of the Eyelids.

It may be of various character. A *simple inflammation* may be the consequence of a cold. It usually commences on the edge and thence spreads over the whole lid to the margo orbitalis,

where it abruptly ceases. By this it is distinguished from erysipelas, which is apt to diffuse itself further and further. The lid is hard, swollen, and red, sometimes covered with little blisters.

A graver form is the **Phlegmonous inflammation**, or **Abscess of lid.** Commencing as a little, firm nodule, it often extends over the eyebrow and cheek, and the lid may attain the size of a pigeon's egg. If not checked in the onset, it terminates in the formation of an abscess which breaks either outside or, in rarer instances, perforates the conjunctiva. If this abscess forms at the inner angle of the eye, near the lachrymal sac, it has been termed **Anchylops.** The CAUSES are: injuries (wounds or blows upon the eye); severe conjunctivitis, or erysipelas; spontaneous development has also been observed.

A third form is the **Tinea tarsi, Ophthalmia tarsi,** or **Blepharitis marginalis,** etc., which consists of an *inflammation of the edges of the eyelids.* In its simplest form it shows merely a slight redness of the edges and some gluing together of the lids in the morning. This may increase, however, to ulceration, thickening and hardening of the whole margin of the lids, when it is termed **Tylosis.** The conjunctiva and the Meibomian glands usually participate more or less in this inflammation and if the ulceration extends to the hair-follicles, the lashes loosen and fall out. In places where the destruction is not too extensive, the lashes grow again, but thinner, crooked and often inverted, which state is called **Trichiasis;** or there forms a double row of cilia either along the greater portion of the lid, or chiefly at one point; this is called **Distichiasis.** This faulty position of the cilia is generally accompanied, or soon followed, by a certain degree of inversion of the eyelid, and perhaps by a shortening and incurvation of the tarsal cartilage, which state is termed **Entropium,** though in simple trichiasis or distichiasis it is not always present. "Entropium may also result from spasmodic contraction of the orbicularis muscle, especially in elderly persons, where the skin of the eyelids is abundant and lax." (G. S. Norton). When, however, by extensive ulceration of the edges and consequent cicatrization the apertures of the Meibomian follicles become closed and obliterated, the lid's margin thickens, and shows a tendency to become everted. This grows the more apparent, when the conjunctiva also is involved in the inflammatory process. And, if to all this a certain degree of atrophy and relaxation of the orbicularis associates, the somewhat everted lid no longer covers the eyeball, but sinks away

from it and the punctum lachrymale becomes exposed. This state of things is termed **Ectropium.** "Ectropium may also result from paralysis of the facial nerves, tumors, caries of the orbit, etc., but the most frequent cause is from cicatrices in the vicinity of the lids." (G. S. Norton.)

Blepharitis marginalis occurs often as a consequence of hypermetropia or myopia, but very frequently it is associated either with, or caused by, conjunctivitis or corneitis, affections of the lachrymal canal, as stricture, blennorrhœa, etc. Its intensity is much aggravated by dirt and want, by exposure to wind, cold, bright glare, or an impure, smoky atmosphere.

THERAPEUTIC HINTS.—*Simple inflammation* of the lids is easily arrested by:

Acon., after exposure to cold winds.

Apis, with œdematous swelling and stinging pain.

Bellad., bright, shining redness; right side; photophobia.

Chamom., red swelling after a cold.

Pulsat., with catarrh in the head.

Rhus tox., from left to right; dull redness; watery vesicles.

Phlegmonous inflammation requires besides one or the other of the above:

Hepar, pricking and throbbing pain, worse from cold and contact; anchylops.

Laches., purplish hue.

Merc. sol., pain worse at night.

Pulsat., anchylops.

Silic., after Hepar, when suppuration has taken place, and the patient wants to have his head wrapped up.

Blepharitis marginalis is often very obstinate and difficult to treat. When caused by hypermetropia or myopia, suitable eyeglasses are the remedy; when caused by dirt and want, their removal ought to be attended to; washing and cleaning the lids with luke-warm water is a daily requirement. Remedial agents are quite as necessary.

Alum., dryness of lids, worse in the morning; absence of lachrymation.

Arsen., burning, acrid lachrymation, excoriating the lids and cheek.

Calc. carb. and jod., lids swollen and hard, indurated, also after styes; tonsils enlarged.

Carb. ac., when caused by parasitic fungi, embedded around the hair follicles.

Cinnab., discharge in the morning; dull pain from the inner canthus over the eye, or around it.

Caustic., better in the open air; warts on the eyebrows, upper lid or nose.

Digit., lid-margin slightly swollen and pale red; inside of lids *yellowish*-red; burning of the lid-margin; photophobia; lachrymation and mucous discharge.

Euphras., suppurating lid-margins; constant winking of lids; profuse, acrid, burning lachrymation, or very acrid, thick or yellow discharge, excoriating lid and cheek; fluent coryza, which is mild.

Graphit., dry crusts on the ciliæ, and scales on the margins; the outer canthi are often the most affected part; they crack and bleed easily; moist eczema on the head and behind the ears, cracking and bleeding. "It is the most frequently indicated remedy for chronic ciliary blepharitis, and a more rapid cure can usually be effected by its local application at the same time of its internal administration. I use it locally in some unguent, as cosmoline, about eight grains to the ounce." (G. S. Norton.)

Hepar, upper lid-margins unevenly rounded, swollen and red; tough mucus in lashes and canthi; scleral conjunctiva injected with red vessels running towards the cornea, where they form little vesicles with turbid secretion, lachrymation; pain in the evening, agglutination in the morning; right eye worse; small pimples or little furuncles on the face, or elsewhere, in complication with tinea.

Kali carb., swelling of lids; edges, canthi and caruncula red and swollen; lachrymation and pain from bright light; pressing pain in front of head and temples into the eyes, with heat in face and head; after eating, pressure in stomach, belching; nausea and emptiness in stomach; gagging and vomiting of slime; pressure and anxious feeling in chest; face pale, dirty gray.

Magn. mur., when accompanied with pimply eruption on the face, which comes and goes, but is worse after supper, in a warm room, and before the menses.

Merc. sol., lids smart, are sore and red, especially upper lids; worse at night in bed, from warmth and cold, and from the glare of a fire.

Merc. cor., indurated lids; secretion thin and excoriating; nocturnal aggravation.

Mezer., accompanied by tinea capitis of thick, hard crusts, from which pus exudes upon pressure.

Natr. mur., after the application of nitrate of silver; after measles; acrid lachrymation, excoriating the lids and cheeks and making the skin glossy and shining; eczema.

Nux vom., after previous drugging and when worse in the morning.

Petrol., pain in the back of the head, rough skin; diarrhœa only during the day.

Phosph. ac., lid-margins swollen, red and rounded; lashes partially falling out; pus particles on lashes and in canthi; itching and burning; sensitiveness to candle-light; difficult opening of the eyes in the morning.

Psorin., from right to left; worse mornings and during the day; old chronic cases; offensive discharges from the eyes; photophobia; strumous diathesis.

Pulsat., worse in the evening and in a warm room, better in the open air; lachrymal apparatus affected; styes, and acne in the face.

Rhus tox., lids œdematously swollen; copious, acrid and serous discharge, corroding the adjacent parts of the cheeks.

Sepia, "small pustules, like acne, on the edge of the lids; tight feeling in lids; aggravation morn and eve." (G. S. Norton).

Silic., objects appear as if seen through a fog, ameliorated by wiping the eyes; fluent coryza, corners of mouth cracked; offensive sweat of feet.

Staphis., lid-margins dry, with hard lumps and destruction of the ciliary roots; small tarsal tumors.

Sulphur, lid-margins thick, granulated and rounded; dry crusts in lashes; sharp, sticking pains, as if pins or a splinter of glass was sticking in the eye; morning agglutination; glandular swellings on the head and neck; eruption on the face; pale and puffed face; abdomen hard; disturbed digestion; worse in the evening and gas-light; cannot bear to have the eyes washed.

Tellur., eczema impetiginoides on the lids, with pustular conjunctivitis; much purulent discharge from eyes; offensive otorrhœa.

Thuja, dry, branny eruption upon the lids, chiefly about the ciliæ; lashes irregular and imperfectly grown; eyes weak and watery.

Anchylops will best be met in the beginning by *Apis.*, *Bellad.*, *Hepar*, *Pulsat.*, or *Rhus tox.*

Trichiasis may require operative measures; but cases have been cured without them.

Acon., has been successfully applied in a case of trichiasis and entropium.

Borax, has the symptom, but no verification to my knowledge.

Graphit., may soften the scars.

Natr. mur., after abuse of nitrate of silver.

Sepia, eyelashes gone; edges raw and sore; eversion of puncta; eyes full of matter.

Thuja, dry, branny eruption upon the lids, chiefly about the ciliæ; lashes irregular and imperfectly grown; eyes weak and watery.

Entropium is surely amenable to internal treatment, if recent.

Acon., acute inflammation with dryness and burning.

Calc. carb., has cured cases of senile entropium.

Merc. cor., **Rhus tox.** and **Sulphur**, are oftener indicated than **Lycop.**

Natr. mur., after abuse of nitrate of silver.

Sepia, acute blepharitis.

Ectropium has been cured by:

Apis, stinging pains and great œdematous swelling of lids and conjunctiva.

Arg. nitr., tear-points greatly inflamed and prominent.

Hamam., during the course of a severe conjunctivitis—by external application of "Pond's Extract."

Merc. cor., **Nitr. ac.** and **Sulphur**, have been successfully employed.

Rhus tox., sac-like swelling of the conjunctiva; œdematous swelling of the lids; ciliæ fall out; acrid lachrymation in the morning and in the open air. Lids are spasmodically closed; on opening them, protrusion of a thick red swelling, and yellow purulent discharge.

Hordeolum, Stye.

It is in its nature a small furuncle, forming in the connective tissue near the edge of the lid, and has its name from its fancied resemblance to a grain of barley. It appears as a red, hard swelling, which rapidly increases until it suppurates and breaks, either outside or inside of the lid margin. In some cases it is attended with considerable pain, and swelling of the whole lid. Some persons are subject to repeated outbreaks of this furuncular

inflammation. We find it most frequently in youthful individuals of rather delicate health with a tendency to acne, or in persons addicted to free living or dissipation. If by frequent relapses it induces inflammatory changes in the Meibomian glands, and is followed by fatty or chalky degeneration of their contents, it is called **Chalazion.**

THERAPEUTIC HINTS.—**Pulsat.**, most frequently used and indicated; it often arrests its growth.

Hepar, if Pulsat. has not been sufficient to prevent suppuration.

Staphis., often found useful and especially when the stye does not suppurate and break, but remains a hard nodule.

Upper lid: Alum., Caustic., Ferrum, Mercur., Phosph. ac., Sulphur.

Lower lid: Phosphor., Rhus tox., Senega, Staphis.

Right side: Calc. carb., Canthar., Natr. mur.

Left side: Colchic., Lycop., Pulsat., Staphis.

For removing the disposition: Amm. carb., Calc. carb., Ferrum, Graphit., Sulphur, Thuja.

Chalazion: Calc. carb., Conium, Graphit., Pulsat., Sepia, Silic., Staphis., Thuja.

Tumors of the Lid.

Chalazion has been mentioned under *styes.* "It is mostly situated at some distance from the free margin of the lid and generally most manifest on its inner surface, lying close beneath the conjunctiva. In rarer cases the tumor points outwards and lies close beneath the skin, which is frequently somewhat reddened and thinned over and around it. It occurs far more frequently in the upper than in the lower lid. (Walton).

Sebaceous tumors occur most frequently at the outer and upper margin of the orbit, close to the eyebrow. Their contents are suet-like and sebaceous, consisting of broken-down epithelial cells, fat molecules and hairs; sometimes they are softer and more oily. The whole is encased in a cyst wall, the posterior portion of which is somewhat thickened and hypertrophied.

Warts occur occasionally on the edges of eyelids.

Fatty tumors (wens) are of rare occurrence. "They may be recognized by their smooth, circumscribed, somewhat lobulated form, and are firm and elastic to the touch."

Epithelioma "is the most frequent in occurrence of all malignant tumors of the lids; arises as a small nodule near the edge of lid, and is painless, slow in its progress and at last ulcerates. The skin around the ulcer is not swollen and discolored as in *lupus*. The slowness of its growth and the history of the case distinguish from syphilitic ulcer." (G. S. Norton).

THERAPEUTIC HINTS.—*Encysted tumors* have been cured by: Calc. carb., Grapit., Silic., Staphis., Thuja; *warts* by: Caustic., Thuja; *wens* by: Baryt. carb., Graphit; *epithelioma* by: Apis, Hydr. ac., Laches. (G. S. Norton).

Dacryocystitis

Is an acute inflammation of the lachrymal sac, which frequently reaches its acme in a few days and is very painful. Its swelling may extend to the cheek, eyelids and even conjunctiva. In less severe cases, or after the acute inflammatory symptoms have passed away, pus may be squeezed out of the puncta; but when the swelling and thickening of the lining membrane closes the passage, or the opening into the sac becomes somewhat displaced by it, the pus can not escape, and if left alone, will finally force its way through the skin. After the discharge of pus, the inflammation subsides either entirely, and the opening heals, or there remains a chronic inflammation of the sac, with subsequent renewals of acute attacks, or the aperture in the skin does not firmly cicatrize, but merely scabs over, while fresh pus is collecting, which again forces its way out at the same place, thus finally leaving a fistulous opening, through which a thin, mucopurulent discharge and the tears constantly ooze—**Fistula lachrymalis.** Or again the sac may undergo ulceration at one point and the matter escape into the neighboring cellular tissue, thus giving rise to a secondary sac or pouch, which may break, whereby another more or less extensive fistulous opening is established, often very obstinate and intractible, especially if the bony structure is likewise diseased. Of chronic cases there are instances where several such pouches burrow beneath the skin in different directions.

The Causes.—This inflammation is often merely an extension of conjunctivitis, especially the granular form, or of nasal catarrh; it may be produced by periostitis and caries of the nasal bones

in scrofulous or syphilitic persons, or may occur as a primary affection, being then generally due to exposure to cold and wet. "Its most frequent cause is a previous stricture of the nasal duct or blennorrhœa of the lachrymal sac." (G. S. Norton.)

THERAPEUTIC HINTS.—Instrumental aid may be required, but often bad cases have been cured by internal treatment alone. For *dacryocystitis*, at the beginning, **Pulsat.**, or **Apis**, when there is œdematous swelling and stinging pains, but **Bellad.**, **Hepar**, and **Silic.** may also be indicated. We will, no doubt, have to consider its causes (conjunctivitis, nasal catarrh, etc.), and then compare the corresponding remedies.

Fistula lachrymalis: **Bellad.**, inflammation of the lachrymal duct; intolerance of light; profuse lachrymation; lid edges inflamed and agglutinated; morning and evening a gritting sensation in the lids; aggravation in the evening.

Bromine, Calc. carb., Caustic., Fluor. ac., Hepar, Laches., Natr. mur., Petrol., Pulsat., Sulphur, Silic., disorganization of the walls of the sac; denudation of the internal horny wall and closure of the nasal canal.

Blennorrhœa of the Lachrymal Sac

Is another consequence which may follow acute inflammation of the lachrymal sac, in fact it is a chronic inflammation of that organ by which its walls become either thickened and hypertrophied, or thinned and greatly distended, secreting constantly a thin, glairy, viscid fluid, which flows down the nasal duct, or oozes up through the puncta. When the sac gets filled with this secretion, we observe it as a swelling of varying size and hardness. On pressure its contents discharge through the puncta, and the finger sinks in as the sac is being emptied. During warm and dry weather the patient usually experiences very little inconvenience, while on exposure to cold and damp winds the trouble increases, inducing fresh inflammatory action. In this way it comes to pass that strictures are formed either in some part of the nasal duct, or of the canaliculus near its opening into the sac.

Its CAUSES are like those of dacryocystitis—conjunctivitis, nasal catarrh, periostitis or caries of the nasal bones; also obstructions in the lachrymal passages either above or below the sac by a

narrowing, obliteration, or eversion of the puncta; or by contraction or stricture of the canaliculus or of the nasal duct; or by polypi or other growths which compress and obstruct the duct.

THERAPEUTIC HINTS.—Compare the previous article and also those which treat of its causes.

Stannum, "is one of the most important remedies, especially if the discharge is profuse, thick and of a yellow white color." (Geo. S. Norton.)

Firm strictures require instrumental aid.

CONJUNCTIVA.

Catarrhal Ophthalmia

Is an inflammation of the conjunctiva which may extend into the Meibomian ducts, the canaliculi, and the ducts of the lachrymal gland. In its *mild form* it shows merely a slight hyperæmia with a sensation of grit in the eye, itching, stiffness and heaviness of the eyelids with or without sticking together in the morning; there is only exceptionally some mucus excreted and found collected at the inner canthus either fresh or dried into little yellowish or brownish crusts. It is aggravated by exposure to cold winds, when lachrymation is produced. Usually of a chronic nature, it is found especially in persons of ill health, and is often difficult to cure.

In its *acute form* the blood-vessels are much enlarged and appear as a vascular net-work of brick-dust, or of bluish or lilac hue, especially on the ocular portion of the conjunctiva, while on the palpebral portion it is less marked. Often it is accompanied by spots of extravasated blood within the meshes of the membrane, which swells, and has, especially on its palpebral portion, a villous appearance, being due to the engorged state of the villi, an appearance which must not be confounded with granular conjunctivitis. At first there is an increased flow of tears which after a while is replaced by a secretion of mucus, which by degrees gets thicker and is either whitish or yellowish. If it assume a purulent character, the mere catarrhal ophthalmia passes into the purulent form. Chemosis is very rare; photophobia, pain and impairment of vision do not occur in the catarrhal form. In severe cases the eyelids participate in the inflammation; usually

both eyes are effected, not, however, always simultaneously; the second often becomes involved when the first is getting well; it always shows an evening aggravation; and is apt to recur. Its CAUSES are: mechanical and chemical irritation; getting cold and wet; excessive strain of the eyes by artificial light; extension from inflammatory processes of neighboring parts; measles, scarlet fever, small-pox; sometimes it appears *epidemic*. It is *infectious*.

THERAPEUTIC HINTS.—If caused by some foreign body, this ought to be removed.

Acon., reduces the inflammation caused by a piece of steel or cinder and facilitates its removal, if that could not be effected before the inflammation had fully developed. If there remains still some inflammation after Acon., **Sulphur** will cure it. Acon. is also indicated at the beginning of any ordinary catarrhal conjunctivitis, where there is great dryness, burning and heat in the eye and where it has been brought on by exposure to sharp, cold winds.

Apis, œdematous swelling of lids and skin over orbits with redness, heat and sensitiveness to external covering; stinging pains.

Arg. nitr., profuse discharge approaching a purulent character; feels better in the open air, worse in a warm room.

Arsen., lids spasmodically closed; conjunctiva of a dark, violet color; secretion thin and acrid with burning pain, worse at night.

Bellad., right eye; throbbing pain; hot tears or dryness of the eyes; light is painful; nose sore from coryza; headache and similar Belladonna symptoms.

Chamom., often for infants after exposure to cold while bathing and washing. The children cry much; have colic and green stools; also during dentition. Extravasation of blood sometimes.

Conium, right eye bloodshot; aches on lying down to sleep; thirsty; sweat on head, face and neck.

Crocus, feeling in the eyes as after weeping with a corresponding appearance, extending from left to right eye; feeling of something alive and moving in the abdomen.

Digit., chronic; a yellowish redness of the palpebral conjunctiva.

Euphras., acrid tears and profuse, acrid, thick and yellow discharge; blurring of vision relieved by winking; coryza with burning and pain in the frontal sinuses; after exposure to cold and during the first stage of measles.

Graphit., chronic; thin, acrid discharge; external canthi crack

and bleed easily; nose sore and excoriated, with crust on the nostrils.

Merc. sol., blenorrhœa, thin and acrid; great swelling of lids; sensitive to touch; worse in a warm room or in the cold air, and in damp weather; also from evening till midnight; no relief from sweat; frequent relapses.

Nux vom., the inner canthi are more inflamed than other parts; bloody exudation; smarting like salt; all worse in the morning.

Pulsat., bland, moderately profuse, white discharge; worse in the warm room; in the evening; from reading; better in the open air.

Rhus tox., œdematous swelling of the lids; chemosis of conjunctiva; great restlessness; after getting wet.

Sepia, muco-purulent discharge in the morning and dryness in the evening; the conjunctiva is of a dull, red color with some photophobia and swelling of the lids, especially in the morning.

Sulphur, acute and chronic; sharp, darting pains, like pins piercing the eye; severe pain darting through the eye back into the head, from 1 to 3 A.M., waking the patient from sleep; feverish and restless at night.

Zincum, the inner half of the eye is the most affected part, with much discharge; worse in the evening and in the cool air.

Purulent Ophthalmia.

Commencing with mere congestion, itching and dryness, particularly at the inner corner, it gradually augments to intense inflammation of the whole conjunctiva with considerable mucous secretion, which soon is changed into a purulent discharge, dissolved in the tears. The lids swell and become slightly everted, the conjunctiva is dark red and the single blood-vessels are no longer to be seen. The parts affected feel hot and scalding with neuralgic pains which may extend to the temple and forehead. As the disease progresses, **Chemosis** sets in, that is an infiltration of the conjunctival and subconjunctival tissue, and in addition we observe spots of extravasated blood. In this way the conjunctiva swells often to a degree that it overlaps the cornea, but shows itself most prominently at the lateral sides of the eyeball, where it receives the least pressure from the eyelids. The inflammation generally spreads to the areolar tissue of the orbits together with the tunica vaginalis oculi, causing a slight protru-

sion of the eyeball; the eyelids swell still more and the upper overlaps the lower, while the protruding conjunctiva always everts the lower and sometimes both. The protruding part of the conjunctiva is very marked in its villous appearance. If cured in this stage, the eye may escape serious injury. But if it goes on the palpebral papillæ may undergo a change which is called granulation, of which later; the cornea may be rendered opaque by interstial changes, or it may be destroyed by softening and ulceration; the iris may inflame and adhere to the cornea; the vibrous body, the retina, and the choroid may be partially or quite spoiled; the sclerotica may become softened; the crystalline lens, when not discharged through the perforated cornea, becomes quite yellow; and all this destructive process may run its course in a space of time from a few days to three weeks.

This dreadful disease is most common and severe in hot climates; in temperate latitudes it is found more especially in the army, navy, in workhouses, prisons and among the poor; it is chiefly endemic and spreads by infection.

Gonorrhœal ophthalmia, which has been developed by infection from urethral pus, cannot be distinguished from the purulent form, except by the history. It is one and the same kind of inflammation, only intensified, destroying the eye with great rapidity.

Ophthalmia neonatorum "is essentially the same disease as purulent ophthalmia in the adult, merely modified by the undeveloped tissues of the babe, and the activity of the growing processes, the infant organism, but it is generally more severe." (Walton.) Usually about three or four days after birth it commences with some slight redness of the lids and slight discharge; the eyes are kept closed; light is distressing; then gradually the lids swell, and the purulent discharge becomes profuse, when the whole train of symptoms, above described, may be considered as fairly set in motion. But fortunately not all cases are of this virulent nature; simple catarrhal inflammation, caused by chilling the child when bathing or washing it, or using strong soap, which irritates the eyes—may as well commence at that time; the purulent form originates from leucorrhœal or gonorrhœal discharges of the mother transmitted to the eyes of the child during parturition.

THERAPEUTIC HINTS.—As in all three forms of purulent ophthalmia the discharge is poisonous; great care should be taken as to cleanliness in nursing such cases.

Apis, œdematous swelling of the lids and adjacent cellular tissue; conjunctiva congested, puffy, chemosed; lids everted, villous; cornea grayish, smoky, opaque; *burning, stinging* pain; photophobia and hot lachrymation.

Arg. met., purulent; infant; any effort to separate the lids caused a drawing-in of their edges. (After Sulphur and Calc. carb. had been without effect.)

Arg. nitr. Allen and Norton have witnessed the most intense chemosis with strangulated vessels, most profuse purulent discharge and commencing haziness of cornea with a tendency to slough, subside rapidly under this remedy in its 30th potency internally, and at the same time a solution of five or ten grains to two drachms of water of the 1st, 3d or 30th dilution as an external application. The very absence of subjective symptoms, with the profuse purulent discharge and the bulging lids from a collection of pus underneath or from swelling of the sub-conjunctival tissues, and not from infiltration of the connective tissue of the lids themselves (as in Rhus or Apis), indicate this drug.

Arsen., is characterized by a thin and corroding discharge with great burning pain and restlessness; after abuse of nitrate of silver.

Calc. carb., profuse, yellowish-white discharge; ulceration of cornea; œdema of lids; later opacities of cornea; well-known Calcarea symptoms; after working in the water.

Chamom., ophth. neonatorum; lids much swollen, conjunctiva bleeding when separating the lids; child cries much; wants to be carried about; has colicky pains and green discharges.

Euphras., compare catarrhal ophthalmia.

Hepar, purulent secretion in scrofulous subjects; lids swollen, spasmodically closed, bleeding easily on attempting to open them and sensitive to touch; intense photophobia; throbbing pain, better from external warmth, worse from any draught of cold air. Ulceration of cornea and hypopion; affection of Meibomian glands.

Lycop., ophth. neonatorum; copious discharge of pus; the lids are puffed out by pus beneath; the conjunctiva looks like a piece of raw flesh.

Merc. sol., ophth. neonatorum; thin, excoriating secretion from

the eyes; green, diarrhœic stools with straining; soreness of anus; jaundice; syphilitic and gonorrhœal infection. The other mercurial preparations have also been successfully used.

Natr. mur., especially as an antidote to nitrate of silver, so frequently abused.

Nitr. ac., especially as an antidote to mercurial and syphilitic poison.

Pulsat., ophth. neonatorum; profuse and bland discharge; from gonorrhœal poison; all worse in the evening and better in the open air. Allen and Norton found it of great benefit as an intercurrent remedy when Arg. nitr. seemed to give out.

Rhus tox., œdematous swelling of lids, and of conjunctiva; great restlessness; after getting wet; commences on the left eye. The discharge is profuse, or tears are gushing out of the eye.

Sulphur, often in chronic cases with an outspoken psoric cachexia.

The **gonorrhœal** and **syphilitic** form may require besides the remedies mentioned: **Cannab.**, **Cinnab.**, Carb. veg., Kali bich., Phytol., Tart. emet., Thuja.

Granular Ophthalmia.

"Under granular ophthalmia are classed two different forms of conjunctivitis, follicular and granular. The former is an accumulation of lymphoid elements. It never involves the deep structures of the lids or surrounding conjunctiva, and, therefore, disappears without leaving cicatricial changes. It is characterized by round or oval, pale red prominences, often arranged in rows in oculo-palpebral folds, especially lower and accompanied with some catarrhal symptoms of conjunctiva.

True granular conjunctivitis is a much deeper and more serious form of inflammation. It involves deeply the stroma of conjunctiva (palpebral), as is shown by the proliferation of papillæ and development of so-called granulations. It always leaves scars behind, causes pannus, serious results to vision, entropion, trichiasis and other disorders, which is not the case in follicular conjunctivitis. It also especially involves the upper lid. It may be acute or chronic. The two diseases may be found together." (G. S. Norton).

By the continual friction of the granules upon the cornea the latter may become hazy, rough or semi-opaque and vascular, a

state which is known under the name of **Pannus**, though this opacity and vascularity of the cornea may also be produced by trichiasis, or any friction of the lid-edges. The granular eyelid is usually attended with great sensitiveness to light, cold air, wind, dust and smoke; reading, writing and sewing causes pain in the eyes and an increase of redness; there is mistiness of sight; rainbow colors around luminous bodies and finally, when the cornea more and more degenerates and even deeper portions of eyeball become involved in the inflammatory process, sight may be considerably damaged.

CAUSES.—Being not a specific disease, it usually is the consequence of neglected conjunctivitis, which has become chronic. We find it, therefore, most frequently among the poor, and as in all ophthalmias the secretion is infectious, it too is propagated by infection, and consequently most prevalent where large masses of people are crowded together. "But the commonest of all existing causes, is the use of nitrate of silver in substance for the primary inflammation, or in lotions or salves, of such strength as to be highly irritating." (Walton.)

THERAPEUTIC HINTS.—Acon., in acute aggravations by overheating or exposure to dry, cold winds.

Alum., upper lids are weak and hang down loosely.

Arg. nitr., being so often the cause of granular lids, it surely must do good, where it has not been abused; compare the forgoing chapters.

Arsen., see purulent ophthalmia; lids spasmodically closed; palpebral conjunctiva inflamed, raw and suppurating; cornea degenerated; on the face a fine eruption; under the eyes excoriated places by the acrid discharge, which are sometimes covered with crusts.

Aurum, with pannus; great photophobia; hot, burning tears when attempting to open the eyes; excoriation on the cheeks and swollen glands on the neck; after the abuse of Mercury.

Bellad., acute aggravations with great photophobia.

Calc. carb., with pannus; caused by working in the water; deafness or ear discharges; sweat on forehead; thick, red nose with acrid discharge, or nose stopped up; swollen upper lip; swollen glands on neck; large abdomen; desire for boiled eggs.

Euphras., with or without pannus; profuse lachrymation and thick discharge, excoriating lids and cheek.

Kali bich., with pannus; everything appears slightly red; eyes feel better when lying on the face.

Merc. præc. rub., with pannus; old chronic cases.

Merc. protojod., with pannus, and superficial ulceration upon it.

Merc. bijod., "of great value in old cases of granular lids and pannus." (G. S. Norton.)

Natr. mur., the most important remedy after cauterization, especially with nitrate of silver.

Nux vom., often gives great relief after many other crude drugs have been employed.

Petrol., with pannus; occipital headache; roughness of skin; scrofulous habit.

Pulsat., papillary trachoma without pannus in tearful females; with evening aggravation and amelioration in the open air.

Rhus tox., with pannus and profuse lachrymation.

Sulphur, when other remedies fail to act; often better indicated by other than eye-symptoms; the psoric tendency of the patient and his dislike to water and the like.

Thuja, granulations large, wart-like; pain worse at night, after midnight.

The following remedies are mentioned favorably: Alumen exsiccatum, Caustic., Chin. mur., Chin. tan., Cinnab., Conium, Cupr. al., Cupr. sulph., Hepar, Merc. sol., Natr. phosph., Sepia, Tart. em., Zincum.

Phlyctenular Ophthalmia.

The phlyctenula commences as a little vascular patch, at the summit of which the epithelium is raised by serum into a vesicle; the conjunctiva swells, the vessels enlarge, profuse lachrymation ensues, and a catarrhal discharge is produced. By this time the vesicle bursts and a little ulcer is formed which secretes an opaque grayish substance, under which the ulcer may heal, if the inflammation does not extend, before the repair is effected. The phlyctenulæ appear most frequently at the corneo-scleral border, sometimes also on the cornea, and exceptionally on the oculo-palpebral or palpebral conjunctiva. They appear either singly or there may be several scattered about or in groups, and sometimes disposed in a circular manner, partially surrounding the cornea. Ordinarily the redness is only on one side of the eyeball, where the eruption is located; sometimes the whole conjunctiva is

inflamed. At its outbreak it is attended with stinging and itching; photophobia is not very great, but increases as the inflammation is nearer or at the cornea.

CAUSES.—Ill health, debility; hereditary weakness, impure air, insufficient diet and clothing, want of exercise; exposure to wet and cold.

THERAPEUTIC HINTS include those for pustular keratitis and so-called ophthalmia scrofulosa.

Apis, eyelids puffed; conjunctiva chemosed; cornea grayish, smoky, opaque; pain burning-stinging.

Arsen., lids spasmodically closed; conjunctiva and cornea pustulous and ulcerated; lachrymation and discharge excoriating the surrounding parts; burning pain; nose and upper lip excoriated by acrid discharges; great restlessness and thirst.

Aurum met., great photophobia; hot, burning tears; cutting pain through the eyes, sensitive to touch; swollen glands on neck; after mercurial poisoning.

Baryt. carb. and **jod.**, enlarged cervical glands.

Calc. carb. and **jod.**, scrofulous subjects; from exposure to wet, and worse during damp weather; complication with deafness; swollen glands, etc. See previous chapters.

Caustic., pain relieved by external pressure; yellow face; warts on nose or eyebrows.

Chamom., compare under purulent ophthalmia.

Cinnab., pain from inner canthus across the eyebrows or around the eye.

Conium, great photophobia without much imflammation of the conjunctiva.

Crot. tigl., with a corresponding eruption on face and lids.

Euphras., compare previous chapters.

Graphit., often indicated in the chronic and acute form; the external canthi are cracked and bleed easily when opening the eyes; intense photophobia.

Hepar, ulcers on cornea; intense photophobia, lachrymation and great redness, even to chemosis; pain throbbing, better from external warmth; scrofulous, cross children; abuse of mercury. Hypopion.

Kali bichr. and **hydr.**, absence of pain, of photophobia and redness; secretion of a stringy character.

Merc. sol., ulcers, and chalk-white appearance of the cornea;

lids swollen and spasmodically closed; intense photophobia; excoriating lachrymation; pain worse at night; excoriation of nose; ulcers on tongue; eruption on face and head; aching in the bones; syphilitic subjects. These symptoms fit more or less to other mercurial preparations, of which there have been used with success—

Merc. corr., when the acridity seems still more intense.

Merc. nit., has been used with great success by Dr. Liebold in this form of inflammation, whether acute or chronic.

Merc. præc. rub., differs little from the others.

Merc. protojod., when the tongue has a thick, yellow coating at the base.

Natr. mur., lachrymation and discharge acrid and corroding; after the abuse of nitrate of silver.

Nux vom., after much drugging; morning aggravation.

Psorin., chronic cases with psoric taint.

Pulsat., phlyctenulæ confined to the conjunctiva. Compare former chapters.

Rhus tox., pimples and vesicles on the cornea; great photophobia and intense inflammation; eruptions on head and face; swelling of glands behind the ears. Compare previous chapters.

Sepia, complication with uterine affections; aggravation morning and evening.

Silic., suppurating and perforating ulcers on the centre of the cornea, without blood-vessels running towards it; neuralgic pain in supraorbital nerve; phlyctenules on the boundary of sclera and cornea, recurring often. After vaccination.

Sulphur, very often indicated by the general state of the patient, or when other remedies fail to relieve. The pain is sharp and piercing through eye into the head; worse at nights; eruptions on other parts of the body; swollen glands; diarrhœa early in the morning; water and washing aggravate, and there is a general dislike to being washed.

Tart. emet., photophobia and herpetic eruptions.

Tellur., complicated with offensive otorrhœa.

Zincum, persistent redness, especially at the inner angle and worse in the evening and in the open air, remaining after pustular keratitis.

Still other remedies have been found useful: Arg. nitr., Bapt. tinct., China, Chloral, Cuprum al., Ferrum, Ferr. jod., Hyosc., Kreos., Laches., Lycop., Magn. carb., Mezer., Nitr. ac., Petrol., Phosphor., Podoph., Sulph. jod., Thuja.

Diphtheritic Conjunctivitis.

Like diphtheritis of the pharynx, it is an inflammation of the entire conjunctiva, which becomes tumefied by a corpuscular infiltration of newly-formed cells into the subepithelial connective tissue, so abundant as to compress the blood-vessels and arrest the circulation and nutrition, in consequence of which the conjunctiva degenerates into a necrotic mass, and is thrown off in pus-like secretion. On examining the eye, the conjunctiva appears as if covered with a felted flocculent membrane of a pale yellowish or grayish hue, especially on the palpebral conjunctiva and on the oculo-palpebral fold. The eyelids are swollen, hard, stiff and hot. Often the internal parts participate in the inflammatory process. After six to eight days the active inflammation subsides, the exudation dissolves and is thrown off as a pus-like discharge, when finally the injured parts heal and become cicatrized, involving sometimes the cartilage and deeper tissues of the lids, and causing entropion, symplepharon, secondary corneal affections, etc. It ought to be born in mind, that the diphtheritic conjunctivitis is the most destructive form of external inflammation of the eye and that its discharge is extremely contagious.

Causes.—In Northern Germany it has appeared as an epidemic; in this country only sporadic cases have been seen. Some say, purulent ophthalmia may be converted into this form by the improper use of escharotics; it may be inoculated and it may be idiopathic, its cause lying in constitutional conditions, and be complicated with diphtheria in the throat, with scarlet and puerperal fevers, and even with measles. It may attack young and old.

THERAPEUTIC HINTS must be more or less identical with those given under Diphtheria, which compare.

Croupous Conjunctivitis

"Is much more common and should be distinguished from diphtheritic. The lids are swollen (usually œdematous), but not firm and hard, as in diphtheritic. The false membrane is present to a greater or lesser extent and more or less adherent, but it is on the surface of the conjunctiva (especially palpebral) and does not leave cicatrices behind, while in the diphtheritic form the exuda-

tion is in the stroma of the conjunctiva and cicatrization always results. Croupous conjunctivitis is therefore much less serious than diphtheritic, though the former may pass over into the latter.

THERAPEUTIC HINTS.—**Acet. ac.** is particularly the remedy when the membrane is yellow, white and very dense, tough and adherent.

Arg. nitr., after degeneration of the membrane has set in and the discharge is more purulent.

Kali bichr., if the membrane is loosely attached and comes off in strings and threads." (Geo. S. Norton.)

Pterygium.

This is a triangular or wing-shaped adventitious growth on the ocular conjunctiva. Starting with its broad base at the corner of the eye, it reaches with its apex (seldom the middle, and still more seldom crossing the middle) of the cornea. It is loosely connected with the conjunctiva. It generally makes its appearance at the *inner*—rarely at the outer—corner of the eye. Very rarely it appears on the upper or lower part of the eyeball. These growths are of different consistency and color: some look red, inflamed, and are full of blood-vessels; some are quite thin, almost transparent; and still others are thick and of a whitish or yellowish hue.

Their origin is usually due to a chronic inflammation of the conjunctiva, and therefore always preceded by increased vascularity of the spot of the conjunctiva in which it appears. Tropical influence is considered as an excitant. It appears after the adult period; but there are also congenital cases.

THERAPEUTIC HINTS.—**Arg. nitr.**, pink color; discharge from the eye; inflammation better in the open air, unbearable in a warm room, with pain at the root of the nose.

Arsen., dryness and burning in the eye; or acrid lachrymation and discharge.

Calc. carb., from exposure to wet and cold.

Zincum, thick and vascular; conjunctiva injected; lashes inclined to turn inward; external canthi sore and cracked; eyes feel sore in cold air, better in a warm room; itching and lachrymation at night; green halo around candle-light; rush of blood to the head over face, followed by perspiration over body; pressure across the root of the nose and supra-orbital region. (Dunham.)

Still other remedies have proved useful: Chimaphila, Laches., Nux mosch., Psorin, Ratan., Spigel., Sulphur.

CORNEA.

Corneitis, Keratitis.

Inflammation of the cornea is always attended by some degree of inflammation of the surrounding conjunctiva and sclerotica. Ordinarily its epithelial layer is first affected; it becomes visible by the molecular cloudiness of its cell contents and the proliferation of the cells themselves; this is followed by a subepithelial infiltration which may involve the true corneal elements. In this way the cornea swells; the epithelial layer becomes rough and loses its polish, and the anterior portion of the true cornea assumes a general dulness or grayish opacity of different degrees. The blood-vessels, in fine net-work superficially arranged, follow the opacity from the circumference, being formed in the exuded material, whereby the cornea is reddened; they communicate with the blood-vessels of the conjunctiva. This affection is always accompanied with photophobia, lachrymation, blepharospasm and pain; the amount of interference with vision depends on the amount of the opacity over the pupil. Its causes are either mechanical or chemical irritations.

When *phlyctenulæ* form on the cornea, the affection is usually called **Strumous** or **Scrofulous ophthalmia**; it is frequently associated with phlyctenules or pustules on the conjunctiva, as described under "phlyctenular ophthalmia," which compare.

When the inflammatory symptoms are more chronic in character and the destructive effects are deeper and greater, it is termed **Diffuse or Parenchymatous corneitis.**

"The cornea has then lost its natural polish and resembles a piece of glass that has been breathed on. Or it may have a more stippled aspect, with greater roughness, whereby there is more haziness. With this there is a deep-seated, streaked or speckled whiteness or yellowishness, arising from interstitial deposits of materials in the true cornea. The true corneal tissue is not long pervaded by opacity in any form, before such opacity commences to be injected with blood-vessels, which may be few and isolated, or numerous and close, looking like a red patch." (Walton.) Pain, photophobia, and plepharospasm seldom exist, except in

the beginning of the disease. Its spoiling effects may be changes in the curves of the cornea causing myopia or astigmatism; or limitation of vision; adhesion of the iris to the cornea; changes in the deeper parts of the eye; even atrophy of the eyeball from ophthalmia.

Causes.—External injuries to the cornea and constitutional derangements, especially hereditary syphilis.

When by long-continued mechanical irritation from cicatrizes of the eyelids, from the contact of the cilia in trichiasis and entropium, from granular conjunctivitis the cornea becomes inflamed, cloudy and vascular, or even vascular granulations appear, especially on the upper half of the cornea in consequence of the greater irritation of the upper lid—we have **Pannus.** As the vascularity increases, the cornea is ultimately surrounded by a thick tumefied network of varicose vessels, interspersed with numerous reddish-brown granulations.

When in consequence of inflammation suppuration takes place between the layers of the corneal laminæ, we have an **Interstitial abscess of the cornea**, which appears either as a yellowish spot with whitish circumference in any part of the cornea, or as a deposit of pus diffused throughout the cornea, so that the whole looks yellow. The pus may gravitate to the lower margin of the cornea, forming there a curved line which resembles the white mark at the root of the nail, hence it is called **Onyx.**

When in consequence of inflammatory proliferation of the epithelium of the posterior elastic membrane of the cornea an exudation of mucus and pus corpuscles takes place into the anterior chamber, we have **Hypopion.** The quantity of this exudation may be merely recognizable or may fill both chambers of the eye. Its color is usually creamy, but it may be streaked red with blood, or altogether red from the same. In changing the direction of the head from the perpendicular, the loosely lying mass shifts its position in the chamber and is therefore readily distinguished from onyx.

When, however, in consequence of inflammation of the conjunctival layer of the cornea, its substance becomes rough and is cast off or exfoliated, and the breach constitutes an ulcer, we then have a *surface abscess*, or as it is termed **Ulceration of the cornea** The ulcer may appear at any part of the cornea; it may be superficial or deep, even penetrating the cornea. The surrounding conjunctiva and sclerotica become vascular, and the more

so as the ulcer is nearer the margin of the cornea. Deep ulceration excavates the cornea and the spot becomes covered with a pus-like material; it may perforate the cornea, when the aqueous humor flows off; it may be associated with onyx or hypopion. The subjective symptoms are those of interstitial conjunctivitis, and its causes the same. Iritis is no uncommon complication. It may result in *opacity* of the cornea (**Leucoma, Macula corneæ**), or in spherical or conical protrusion of the remaining posterior portion of the corneal tissue, and of the posterior elastic lamina, when it is called **Ulcerative corneal staphyloma**; or the ulcerated surface may heal over and cicatrize, leaving, however, the cornea still protruding. This is called **Cicatricial corneal staphyloma**; its most prominent part is the thinnest and the surrounding cornea is often curved in several directions and affected with superficial and interstitial opacity. The staphyloma may burst. When in case of perforation of the cornea the iris falls against or into the gap, it either protrudes through the opening, or in case of cicatrization of the opening, the cornea yields in consequence of the intra-ocular pressure and gradually bulges forward, giving rise to a **Partial staphyloma of the cornea and iris**; a total destruction of the cornea by sloughing or ulceration causes **Total staphyloma of the cornea and iris**, in which process mostly the neighboring portion of the sclerotica, and in time, the whole anterior half of the globe becomes involved.

THERAPEUTIC HINTS.—*Keratitis*, when caused by mechanical irritation requires: **Acon.**, and later **Sulphur**; **Euphras.** with a feeling as if a hair were hanging over the eye; **Symphitum**, with a feeling as if the lid were moving over a ball. Besides may be indicated: **Arnica, Calend.**, or **Hamam.** When caused by chemical irritation we will have to look for the corresponding antidotes of the different chemicals. **Arnica** is most important in preventing suppuration.

Phlyctenular corneitis requires the same treatment as detailed under phlyctenular conjunctivitis.

Diffuse or Parenchymatous corneitis. **Merc. sol.** and other mercurial preparations are the most important. Besides compare: **Apis**, stinging burning pain and œdematous swelling; **Arsen.**, burning pain and restlessness; **Aur. mur.**, hereditary syphilis; "I have found it more commonly indicated than any other remedy." (Geo. S. Norton.) **Baryt. jod.**, greatly enlarged cervi-

val glands and bone-pains at night; **Calc. carb.** and **jod.**, strumous habit; **Cann. sat.**, **Hepar**, promotes absorption; **Sepia**, uterine disturbances; **Sulphur**, promotes absorption.

Pannus. **Apis**, **Arg. nitr.**, **Arsen.**, **Aurum**, **Bellad.**, **Cannab.**, **Chin. mur.**, **Euphras.**, **Graphit.**, **Hepar**, **Kali carb.**, **Merc. sol.**, **protoj.** and **præc. rub.**, **Natr. mur.**, **Petrol.**, **Pulsat.**, **Rhus tox.**, **Sulphur.** For particular indications compare granular ophthalmia and the following.

Ulceration of the cornea. "Bandaging is of the very greatest importance in the treatment of ulcers of the cornea. See page 205 Allen and Norton's Ophthalmic Therapeutics." (Geo. S. Norton.)

Act. rac., sharp, neuralgic pains through the eye into the head.

Apis, stinging-burning pain and œdematous swelling.

Arg. nitr., profuse discharge; halo around the light; darting pain through eye, morning and evening; better in open air; worse in warm room.

Arsen., burning, acrid, profuse lachrymation; photophobia; pain worse after midnight; with restlessness; better from warm applications.

Asaf., iris affected with pain in the direction from within outwards; better from rest and pressure.

Aurum, with pannus; great photophobia and profuse, scalding lachrymation; pains go from without inwards; cervical glands enlarged and inflamed.

Calc. carb. and **jod.**, for scrofulous children with large heads, open fontanels, slow dentition; pot-belliedness; frequent catarrh of nose and bowels; pale face; enlarged tonsils and cervical glands.

Chamom., cross, peevish children who want to be carried about all the time, etc.

Chin. mur., with pannus; severe intermitting pains; anæmic conditions of malarial origin.

Cimic. See Act. rac.

Cinnab., pain above the eye, extending from the internal to the external canthus, or running around the eye.

Conium, superficial ulceration with intense photophobia and a gush of tears whenever the spasmodically closed lids were forced open; with all this but little redness of the conjunctiva.

Crot. tigl., pain in the supra-ciliary region at night and vesicular eruption on the face and lids.

Euphras., burning flow of corrosive tears and a feeling of a foreign substance in the eye, as of a hair; blurring of the eyes

relieved by *frequent* winking; is followed well by Calc. carb. and later by Silic.

Graphit., great photophobia; profuse lachrymation; superficial or deep ulcers; hypopion; lids red and sore, covered with scales; chronic eczema on head, behind ears, on face. The external canthi are prone to crack and bleed.

Hepar, torpid ulceration; hypopion; also profuse lachrymation or want of lachrymation; great redness of cornea and conjunctiva; throbbing pain, better by warmth, worse by cold, or uncovering the eye in the evening. Strumous, outrageously cross children; chilliness, desire to be covered; mercurial poisoning.

Kali bichr., indolent ulceration without photophobia or redness; little pain; slight (if any) discharge of a stringy character.

Kali carb., ulcer in centre; no photophobia; pale, fat and flabby children.

Merc. cyan., trachoma with pannus; intense pain in eyeball, orbit and supraciliary region and head; worse on lying down; nocturnal pains in the joints; syphilitic origin.

Merc. prot., serpiginous superficial ulceration of the cornea; much vascularity and photophobia; tongue yellow at base. (Geo. S. Norton.)

Merc. sol., and other mercurial preparations compare under phlyctenular conjunctivitis.

Natr. mur., acrid tears and discharge; sharp piercing above eye on looking down; after cauterization.

Nitr. ac., is often indicated after Calc. carb., or Pulsat.

Nux vom., **Pulsat.**, compare previous chapters.

Rhus tox., after getting drenched; compare former chapters.

Secale, worse from warm applications.

Silic., deep ulcers; sloughing ulcers; hypopion; the patient wants to have his head wrapped up; after vaccination.

Sulphur, acute and chronic form; hypopion; otorrhœa; eczema; affection of the bones. Cannot bear being washed. "The pains of Sulphur are usually sharp and stitching, as if a needle or splinter were sticking in the eye. They do not extend into the head, with the exception of the shooting pain through the eye into the head from 1 to 3 A.M." (Geo. S. Norton.)

Thuja, syphilitic origin; hypopion; pain over the eyes, as if a nail were being driven in.

Vaccin., with small-pox and after vaccination; also **Variol.**

Opacities have been cured especially by **Calc. carb.**; but the

following have also been successfully employed: Apis, Aurum, Cannab., Chelid., Crotal., Cupr. al., Euphras., Hepar, Kali bichr., Natr. sulph., Nitr. ac, Phosphor., Pulsat., Rhus tox., Silic., Spongia and Sulphur.

Staphyloma.—Notwithstanding several denials from persons who did not know anything about it,

Apis did cure, or to say the least, did reduce under my own observation a staphyloma to a degree, that the eye regained its former usefulness. Years after the same doubts were thrown upon Dunham's cure of a pterygium. Although such doubts do not alter the facts, yet they do injury by disheartening the young physician from even trying to do his best. It seems scarcely necessary to mention, that Apis, in order to be successful, must correspond with the symptoms of the case.

Schelling cured a staphylomatous protrusion by **Euphras.** and **Lycop.** (*Allg. H. Ztg.*, 36, 148), and so did Stapf by the gradual administration, according to the symptoms, of **Sulphur, Calc. carb., Nitr. ac., Pulsat., Euphras.,** and **Senega**; there remained at last a mere slight opacity of the cornea and some distortion of the iris; the protrusion of the cornea *had* been entirely removed (*Arch.* 18, 2, 45).

Bellad., Hepar, Mercur. and other remedies may also be indicated, but if we give up before trying, how shall we find out?

Hypopion has been cured by: **Hepar, Silic., Sulphur, Thuja.**

SCLEROTICA.

Scleritis, Sclerotitis.

Inflammation of the sclera takes place around the cornea and is usually circumscribed, especially between the insertion of the recti muscles; it is characterized by a bluish-red elevation, due to increased vascularity and lymphoid infiltration in the episcleral tissue, and by bright red vessels on the surface; it is usually painful to touch. Although at times complicated with choroiditis, it is not always a sign of hyperæmia of the choroid, because there are severe cases of choroiditis without any scleral complication, and vice versa severe cases of scleritis without choroidal affection. When the uveal tract is involved it is usually the iris or ciliary body and not the choroid, as both (iris and ciliary body) are supplied by the anterior ciliary vessels in common with the sclera. (Norton.)

Repeated attacks of scleritis tend in time to interfere with the nutrition of the sclera, in consequence of which the tunica becomes thin, blue and bulging, either in whole or in part, constituting an **Anterior staphyloma** of the sclera and choroid, which again may terminate in suppuration within the globe, spontaneous bursting and atrophy of the eyeball.

THERAPEUTIC HINTS. — (Allen's and Norton's Ophthalmic Therapeutics).

Acon., acute stage; violent aching, dragging, tearing pains in the eyeballs; contracted pupils; photophobia. Eye sensitive to touch and feels hot and dry. After exposure to cold, dry air.

Kalmia, sclera inflamed; vitreous filled with opacities; glimmering of light below one eye, especially on reading with the other.

Mercur., the sclera is thinned and blue; aching in the eye all the time, but worse at night; some pain around the eye if the iris has become involved. Flabby tongue, offensive breath, night pains; syphilitic origin.

Silic., pains severe, extending from the eyes to the head, relieved by wrapping up the head; aching in the occiput corresponding to the eye affected.

Thuja, has often shown itself useful in all forms of this affection; the sclera becomes soft in consequence of extension of inflammation of the cornea and iris; tenderness of the globe; intolerance of light; general cachectic condition, either scrofulous or syphilitic; long deprivation of fresh air.

Besides are recommended: Coccul., **Pulsat.**, Spigel. and Sulphur.

If in spite of these remedies staphylimatous degeneration of the sclera ensues, *iridectomy* must be made, unless still other remedies are found, to check this morbid process.

IRIS.

Iritis.

Iritis is of frequent occurrence and is usually uncomplicated with inflammation of the neighboring tissues. It very rarely extends from the ciliary body and the choroid, but may extend to these structures. Tenderness of the eyeball to pressure is not marked in iritis, unless the ciliary body is involved.

Simple **Plastic iritis** is characterized by ciliary neuralgia, almost

always worse at night, photophobia, lachrymation, dimness of vision, ciliary injection, chemosis, iris discolored, aqueous, hazy, sluggish, pupil contracted, and adhesion of iris to lens—posterior synechia.

In **Parenchymatous iritis** the iris is more swollen and vascular with more exudation in pupil.

In **Suppurative iritis** the lids are œdematous, there is more chemosis, and pus in the anterior chamber.

In **Syphilitic iritis** we have secondary symptoms of syphilis and often gummata on the iris.

Rheumatic iritis is like plastic, only the episcleral injection may be more marked.

Traumatic iritis is like plastic.

Serous iritis is characterized by a deposit of lymph on the posterior surface of the cornea, which takes a pyramidal shape with apex toward the centre of the cornea, cloudiness and hypersecretion of the aqueous humor, dilated pupil, deep anterior chamber and slight photophobia, lachrymation, ciliary injection. (Geo. S. Norton.)

THERAPEUTIC HINTS.—"In the treatment of iritis **Atropine** is, I believe, of the greatest importance. The pupil must be kept dilated, or you are almost certain, in the great majority of cases, to have serious results, as posterior synochia remaining after the inflammation has been subdued. Dry warmth and rest are also very important aids in the treatment." (Geo. S. Norton).

Acon., rheumatic form, after exposure to cold winds with great dryness and heat in the eye.

Arnica, rheumatic and traumatic form.

Arsen., burning pains worse after midnight, better from warm applications.

Asaf., syphilitic form and after overdosing with mercury; severe throbbing, or burning, or sticking pain from within outward, better from rest and pressure.

Aurum, syphilitic form and after the abuse of mercury and potash; pain in the orbital bones, pressing from above downwards, or from without inwards, worse on touch; great mental depression.

Bellad., rheumatic form; pressing pain around the eye, or stitching pain above or beside the eye, as if it were torn out or pressed in; pains come and go, with flashes of light or dark spots with light margins, or dark fog before the eyes; severe vertigo and headache even to loss of consciousness.

Bryon., rheumatic form; the pain is worse from moving the eyes and also in the evening and at night; there is shooting pain in the head, and pain as if the head should burst on stooping.

Calend., traumatic iritis.

Cedron, supra-orbital neuralgia, periodical.

China, periodical pains; after loss of vital fluids and of malarial infection.

Cinnab., syphilitic form; pain commences at inner canthus, extending across the brow, or passing around the eye; nocturnal aggravation; intermitting pain.

Clemat., pressing pain in the eyes, photophobia and lachrymation, worse in the open air; heat in the eyes.

Coloc., rheumatic form; around the cornea a bluish-white ring; photophobia; no lachrymation; tearing pain in eye and surroundings; worse in the evening and at night.

Conium, excessive photophobia without corresponding redness of eye.

Euphras., rheumatic form; aching and occasional darting pain in eye, worse at night; iris adhering.

Gelsem., serous form with choroidal exudation.

Hamam., traumatic form with hæmorrhage into the anterior chamber.

Hepar, with corneitis or hypopion. Characteristics see in former chapters.

Kali jod., syphilitic form. After abuse of mercury.

Mercur. and its various preparations, syphilitic and other forms; tearing, boring pains in the bones around the eyes; worse at night; sclerotitis and conjunctivitis; sweat without relief; bad smell from mouth; frequent spitting of saliva; tenesmus.

Merc. corr., is commonly indicated by the symptoms of iritis more than any other drug. (Norton.)

Natr. mur., pupil contracted; iris discolored; violent stitches in the temples on looking into the light or when the light is changed; on reading or writing the letters run together; sight much impaired.

Nitr. ac., chronic syphilitic form with very little pain (Norton); also after abuse of mercury; pain worse on any change of temperature, at night and on touching the parts.

Nux vom., rheumatic and syphilitic form; after drugging; pain worse in the morning.

Petrol., syphilitic form with occipital headache.

Pulsat., rheumatic form; pain worse in the afternoon and evening; cries easily and is worse after crying.

Rhus tox., rheumatic and traumatic form; lids swollen and spasmodically closed; lachrymation; conjunctiva chemosed; pain worse at night; after getting wet; rainy weather; after Bryon.

Silic., with hypopion and corneitis.

Spigel., rheumatic form; excessive pain in and around the eye, especially on moving; sometimes periodically from morning till noon, and then abruptly ceasing.

Sulphur, rheumatic and other forms; with hypopion; relapsing cases; psoric tendency; pain worse in the evening and at night; ears often affected.

Tereb., rheumatic form; after suppression of perspiration of the feet; urinary symptoms.

Thuja, syphilitic form; condylomata on the iris; wart-like excrescences on the iris; pain better by warmth.

Besides have been successfully employed: Arg. nitr., Crot. tigl., Hyosc., Iodum, Lycop., Plumbum, Stilling., Zincum.

CHOROIDEA.

The choroid is a dark brown vascular coat, which lies within and in contact with the sclera, and between it and the retina; its proper structure terminates anteriorly where the ciliary body commences, which forms the connecting link between it and the iris.

Choroiditis

"is usually found uncomplicated with inflammation of other portions of the uveal tract.

In **Choroiditis disseminata** the eyes feel weak and vision is blurred. The ophthalmoscope shows a yellowish-red nodule in the choroid in the first stage which soon atrophies, leaving a white spot surrounded by a rim of proliferated pigment. Other spots follow, and as they have a tendency to coalesce they form large atrophic plaques. The haziness of the vitreous is not marked unless the choroiditis is of the syphilitic variety when the haziness of the vitreous is a very prominent symptom, as is the non-tendency of the spots to run together.

Choroiditis suppurativa (panophthalmitis) is usually the result

of foreign bodies or injuries and its course is generally rapid, destroying the eye. Characteristic symptoms are: œdematous swelling of the lids, chemosis, protrusion of the eye, hypopion, synochia posteriora, white reflex from the fundus, tension increased, eye sensitive to touch, loss of vision, very severe pain, fever and vomiting.

Sclerotico-choroiditis posteriora or **Posterior staphyloma** is found in myopia, especially high degrees, and is characterized by a white crescent around the optic nerve entrance, especially outer side, which corresponds to the bulging of the sclera at that point. It may, however, be irregular and extend around the optic disc. When it is progressing the myopia increases, vision becomes more impaired, black, floating spots appear before the sight and the edges of the crescent are not as well defined. It is a congenital trouble and is increased by overuse of the eyes.

Cyclitis usually passes over into *irido-cyclitis* or *irido-choroiditis*. A prominent symptom of irido-choroiditis is the increased tension in its early and diminished tension in its late stage." (G. S. Norton).

THERAPEUTIC HINTS.—Aurum., serous exudation between the choroid and retina; haziness of the vitreous; sensitiveness to light and touch; pressive pain in eye from above downward or from without inward; pain in the bones around the eye. After abuse of mercury or potash.

Bellad., often indicated by congestion towards the head; eyes sensitive to light; halo around the light; various flashes of light, sparks, etc., before the eyes.

Bryon., serous exudation; following rheumatic iritis; eyeball sore to touch and motion; darting pains through the eye into the head.

Gelsem., serous choroiditis; iritic complications; vision varies from day to day or from hour to hour; sometimes fever, with thirstlessness.

Kali hydroj., syphilitic origin; disseminate variety.

Merc. corr. or sol., disseminate form; iritic complication; syphilitic dyscrasia; tendency to adhesion; nocturnal aggravation of the pains, both in and around the eye.

Nux vom., after use of stimulants; aggravation in the morning.

Phosphor., luminous appearance before the eyes, especially red; after sexual excesses; bright light, natural or artificial, hurts the eyes; they feel better in the twilight.

Prun. spin., with or without iritic or retinal complication; severe pain in the eyeball, as if it were being pressed asunder, or else shooting and cutting pain through the eye and corresponding side of head, or crushing pain.

Pulsat., when corresponding to the general disposition of the patient.

Sulphur, chronic state; sharp, darting pains; after suppression of eruptions; psoric taint.

Besides, the following remedies have been useful: Acon., Arsen., Coloc., Hepar, Ipec., Psorin., Ruta, Silic., Sol. nig.

In **Sclerotico-choroiditis posteriora** has been found useful:

Bellad., flushed face and throbbing congested headaches; photophobia.

Crocus, pain from the eye to the top of the head; also pain from left eye darting to the right; sensation of cold wind blowing across the eyes.

Mercur., usual indication.

Phosphor., muscæ volitantes, flashes of light before the eyes.

Prun. spin., pains in eye as if pressed asunder, or sharp and starting, in and around the eye.

Spigel., sharp, stabbing pains through the eye and around it, often commencing at one point and then seeming to radiate in every direction.

Thuja, often called for in strumous and sycotic persons.

Besides compare: Carb. veg., Kali jod., Lycop., Physostigma, Ruta and Sulphur.

In **Choroiditis suppurativa** compare: **Acon.**, **Apis**, **Arsen.**, **Hepar**, **Phytol.**, (traumatic origin, lids very hard, red and swollen; conjunctiva chemosed and pus in the interior of the eye; severe pain). **Rhus tox.** is the most important remedy. Lids œdematous, much chemosis, photophobia and profuse gush of tears on opening the spasmodically closed lids, hypopion, pains at night, etc. (Norton.) Also: Asaf., Bellad., Mercur., Sulphur.

In **Hæmorrhage** compare: **Arnica**, Bellad., Cinchon., Crotal., Hamam., **Laches.**, Phosphor., etc.

Glaucoma.

1. **Acute form.**—Its onset may for hours, days, weeks, months, even years, be premonitioned by one or the other, or several of the following symptoms: a *halo*, gray or colored, or a circle or

several in the same or different colors around *candle light* or luminous objects; flashes or wheels of light in the dark, as well as in the light, with or without intercurrent obscurations of sight; *periodic dimness of sight*, or dimness of a part of the visual field; *rapid increase of presbyopia*, *ciliary neuralgia*, headaches. The attack itself often commences suddenly with severe *throbbing pain in the eyeball* and the corresponding side of the head; the eyeball is very sensitive to touch; flashes of a vivid red or deep orange color appear before the eyes with great photophobia, *increased by exertion*, or anything that quickens the heart's action, even the taking of food. The eyeball shows signs of inflammation in different degrees of intensity, such as: lachrymation and intolerance to light; swelling and redness of the eyelids; conjunctivitis with serous chemosis, but scarcely any purulent discharge; hyperæmia of the sclerotica and *congestion of the anterior ciliary veins;* the *cornea is hazy* and a little roughened, or even vesicular in spots, or sometimes opaque interstitially; its sensibility is more or less lost in parts or in its entire structure. *The iris loses its color*, acquiring a slate-like aspect and is pushed against the cornea; *the pupil becomes dilated*, irregular and *fixed;* its color is less black than usual, but more of a drab color, showing sometimes even a shade of green. The *eyeball*, on palpation, *feels harder* than natural. *The vision gradually grows duller*, a thick fog appears before the eye in daylight and at night prismatic colors surround the candle light. The visual field usually commences to contract on the inner side and after a while all vision is lost. *Ophthalmoscopic inspection* reveals: haziness of the vitreous body; in hæmorrhagic glaucoma, which is rare, there is hæmorrhage either from the disc, the retina or the choroidea, singly or combined; *excavation of the optic disc*, called glaumatous cupping, with dilatation of the retinal veins and pulsation of the central retinal arteries.

2. The **subacute form**, or **chronic glaucoma**, shows all the symptoms above enumerated, only not so sharp and definitely marked, although leading in an insidious and slow manner to the same results. Glaucoma always begins in one eye, and is very apt to develop in the other, in the course of months or years. Its *causes* have not been sufficiently explained and the nature of the glaucomatous tension of the eyeball is also not fully established.

Post-mortem examinations have revealed: obliteration of Schlemm's canal (Kniess); closure of the drainage channels

(Weber); atrophy of the ciliary body, and atrophy or adhesion of the iris (Brailey), all of which are supposed to be more or less concerned in producing the increased tension of the globe.

THERAPEUTIC HINTS.—*Iridectomy*, first recommended by Dr. von Graefe, is by some considered as the only remedy worth speaking of, while other eye-surgeons recommend frequent *tapping* of the cornea, and the newest of all is *sclerotomy*. Whichever may be preferred or deemed necessary, in this I agree entirely with Walton, when he says: "Treatment by practical surgery alone is not enough; it should be but a part, an auxiliary of a therapeutic system, embracing those details which help so much in subduing the abnormal conditions which are common to other affections and to glaucoma. I allude, of course, to the abnormal conditions of inflammation of the uveal tract, particularly choroiditis, to neuro-retinitis and hyalitis." (Page 1172.)

Arg. nitr. See *Advance*, October, 1879.

Aurum, pressure from within outward, and from above downward in eyeball; heavy, dull aching of the globes; upper half of an object invisible; showers of bright, star-like bodies appear in the upper dark section; bright, floating streaks and dots in gaslight before the eyes.

Bellad., pain in and around the eye, of a pressing nature, as if the eye were being pressed into the head, or sometimes as if the eye were being torn out; the eyes feel hot, dry and stiff, as if they might protrude.

Bryon., the eyes feel as if pressed out, often attended with sharp shooting pains through the eyes and head; they feel sore to touch and on moving them.

Cedron., severe shooting pain along the course of the supra-orbital nerve.

Coloc., severe burning, aching, sticking, *cutting* pain in the eye and around, always relieved by firm pressure, and by walking in a warm room, worse by rest at night and upon stooping.

Eserine is much used at present and in some cases seems to act well. (Norton.)

Phosphor., halo around the light, and various lights and colors flashing before the eyes.

Prun. spin., severe crushing pain in the eye as if pressed asunder, or sharp shooting through the eye and corresponding side of the head.

Rhodod., periodic pain in and around the eye, worse before a storm and better after the storm commences.

Spigel., sharp and stabbing pains through the eye and head, worse on motion and at night.

Besides should be compared: Arnic., Arsen., Chamom., Coccul., Collin., Conium, Crot. tigl., Gelsem., Hamam., Kali carb. and jod., Mercur., Nux vom., Phytol., Sulphur and Val. of Zinc.

OPTIC NERVE AND RETINA.

The optic nerve and the retina may, each of them, be the isolated seat of morbid derangement, the first usually from some cerebral disturbance, the latter from intra-ocular disorder; but either of them, if extensively affected, will also affect the other. We speak therefore of

Neuro-Retinitis

as an inflammation of the optic nerve, the optic disk and the retina, a separation of which into different forms would be of little practical use.

Its SUBJECTIVE SYMPTOMS are: haziness or fogginess in various degrees; reduction of acuteness of direct and indirect vision; contraction of the visual field; blind spots in the visual field; distortion of objects looked at; subjective appearances of light, so-called sparks, or flashes, or *photopsia;* subjective play of colors, colored spectra, or *chromotopsy;* the latter two may occur even when the case has proceeded to absolute blindness. Still all these symptoms may occur also in various other intra-ocular diseases and the only sure way of making a diagnosis is with the ophthalmoscope.

The OPHTHALMOSCOPIC SYMPTOMS are: optic disc swollen and outlines ill-defined, retina hazy and vessels veiled here and there; tortuous appearance of the veins which are dark and full; usually hæmorrhage, most frequently observed in the retina, seldom in the disc; occasionally whitish dots scattered in groups or dull glistening patches in the semi-opaque retina. There are no external objective symptoms, unless other ocular tissues are drawn into the morbid process. It may lead to partial or complete atrophy of the retina.

Its CAUSES are: *Albuminuria*, and then it is called **Retinitis albu-**

minurica; hæmorrhage into the retina and white spots here and there, especially of a stellate arrangement in the macula lutea are characteristic and early symptoms of this form. *Syphilis*, and then it is called **Retinitis syphilitica**; it can be diagnosed only by the precedence or presence of some other mark of constitutional syphilis. *Diabetes*, and then it is called **Retinitis diabetica**, with similar appearance as retinitis albuminurica; *Leucæmia* (**Retinitis leucæmica**); great pallor of the retinal vessels; *hæmorrhages* in retina(**Retinitis apoplectica**); *deposits of pigment* in retina (**Retinitis pigmentosa**); contraction of field of vision, night-blindness and deposits of pigment in retina extending from periphery to centre of fundus. Direct and reflected rays of artificial light or of the sun, and overstraining the eyes under imperfect or unsteady light, also traumatic injuries.

There are other affections of the optic nerve and of the retina which too may cause impairment of sight or even total blindness, without showing *externally* any objective symptoms. Such affections were, before the ophthalmoscope was known, classed under the terms **Amblyopia** (impaired sight) or **Amaurosis** (what renders obscure, dark). These terms have of late been stricken out of the books, because where there is impaired sight or loss of vision there can now, by the use of the ophthalmoscope, be found also a corresponding change in the optic nerve or retina, a pathological cause of amblyopia or amaurosis, from which the affection receives its proper name.

THERAPEUTIC HINTS.—**Acon.**, total blindness produced suddenly by taking cold.

Ammoniacum, after severe blows upon the head, sight impaired; smoke before the eyes, shaping in different circles, most distinctly on white ground; the margins of the circles are gray and become black upon sudden motions of the eye; better in clear, worse in cloudy weather; persons in a distance he cannot recognize; by candle-light their faces appear dark.

Apis, albuminuria, after scarlet fever.

Arnica, after a violent blow, loss of sight.

Arsen., after abuse of liquor and tobacco; urine scanty and albuminous.

Aurum mur., after scarlet fever and during childbed (albuminuria); sudden loss of vision, with cold perspiration, small pulse, quick and irregular breathing.

Bellad., optic disc swollen and outlines ill-defined, retinal vessels large and tortuous, blue and bluish-gray film seems to cover fundus. (Norton.) Hæmorrhage of retina, with suppression of menses; cerebral congestion; sudden heat of head; vertigo, burning and throbbing pain; noises in ears and illusions of vision, while the rest of the body is cold and shivering; pulsation of carotids. After suppressed scarlet eruption.

Bryon., eyes feel full and sore on motion or to touch.

Cactus, with heart troubles.

Cinchon., sudden blindness with violent pain in occiput, extending into the eyes; irritability of entire spine; spleen swollen and painful to pressure; rumbling in the abdomen; sour vomiting; constipation.

Crotal., hæmorrhages in retina. (Norton).

Gelsem., thirst for light; after apoplexy, congestion to the head; albuminuria during pregnancy, after diphtheritis.

Kali hydr., syphilitic form.

Laches., hæmorrhage of retina; albuminuria.

Merc. corr., albuminuric form, especially during pregnancy.

Merc. sol., sensitiveness of the eyes to the glare of a fire.

Nux vom., abuse of stimulants and tobacco.

Phosphor., photopsies and chromotopsies, as halo around the light; dryness of the nose; after sexual excesses.

Pulsat., "choked disc," great swelling of optic papillæ and enlargement of vessels; vision nearly lost, with severe headache, only relieved in the open air. (Norton). Menstrual difficulties.

Secale, photophobia; suppressed secretion of tears; stitching pain in the eyes; dilated pupils; blue and fiery dots flying before the eyes.

Sulphur, suppressed itch.

For impaired sight (amblyopia) and blindness (amaurosis) the following remedies also have been found useful: Alum., Baryta carb., Bovista, Calc. carb., Chelid., Crotol., Cyclam., Elaps, Hepar., Ignat., Kali acet., Lycop., Natr. mur., Ruta, Santon., Sepia, Thuja, Zincum.

Hemiopia,

Or half vision, is a contraction of the visual field, either on the two right or on the two left sides of the eyes, in consequence of an affection of either the right or the left optic nerve tract before

the crossing at chiasm; blindness of the opposite sides of each retina, occurs when the optic nerve fibres are disturbed at the chiasma, that is at the point where the nerve fasciculi cross each other. Upper half blindness denotes an insensibility of the lower portion of the retinal nerve fibres, and is usually dependent upon a detachment of retina or embolism of branch of central retinal artery. **Scotomata**, or blind spots, are insensibility of certain corresponding parts of the retina.

THERAPEUTIC HINTS.—Upper half blindness: Aurum, Digit., Phosphor.; right half blindness: Cyclam., Lith. carb., Lycop.; half vision either side: Bovista, Calc. carb., Caustic., Chin. sulph., Lob. infl., Lycop., Mur. ac., Natr. mur., Sepia, Viol. od.

Hemeralopia, Night-Blindness.

The patient sees well enough, as long as there is enough stimulus of bright light; but he cannot discern objects any more, as soon as the amount of light required by him is withdrawn; be it daylight or candle-light. It is most common among sea-faring men. The glare from the sea seems to be the exciting cause added to some constitutional weakness; but it is also found occasionally with harvesters and soldiers, where fatigue and exposure to the glaring sunlight seem the elements in its production.

THERAPEUTIC HINTS.—Cases have been cured by: Arg. nitr., Bellad., China, Hyosc., **Lycop.**, Pulsat., Ran. bulb., Stramon., Sulphur, Veratr.

Hyperæsthesia Retinæ.

We understand by it an oversensitiveness of the optic nerve and retina; even a small amount of light cannot be borne and sometimes its impression lasts too long. This may be caused by irritation of the optic nerve and retina, with or without ciliary irritation. Ciliary irritation is usually accompanied by lachrymation and pain in the eyeball, and associated with many affections of the cornea and conjunctiva; this affection is usually spoken of as **Photophobia.** When the overexcitement of the optic nerve and retina does not depend on external conditions, we have, with or without intolerance to light, subjective appear-

ances before the eyes, such as sparks, bright white, or colored patches, flames, colored rings, chromatic clouds, so-called *phosphenes*, also known under the name of **Photopsia** and **Chromotopsy**; and in some instances a too long duration of the impressions, especially from bright objects, which continue to affect the optic nerve even after the eyes have been turned to some other object, whereby confusion arises and the objects seem to dance.

THERAPEUTIC HINTS.—For this affection a great number of remedies may present themselves for consideration. We shall have to weigh carefully all the symptoms of the case. Perhaps one or the other of the following may be indicated: Acon., Bellad., Cinchon., Conium, Gelsem., Hepar, Hyosc., Ignat., Lact. ac., Merc. sol., Natr. mur., Nux vom., Phosphor., Pulsat., Sulphur, Tart. em.

LENS.

Cataract,

Is loss of transparency of a part or of the whole, either of the crystalline lens (lenticular cataract), or of the capsule (capsular cataract), or of both (capsulo-lenticular cataract).

In the course of physiological development the lens commences to change after the age of about thirty-five years to greater density, more coloration and loss of convexity, and in the senile eye the pupil has lost its blackness, appears cloudy or of a light amber tint, or brownish yellow, yet without loss of transparency. This ought to be borne in mind. The cataractous changes are different. Consisting in atrophy from loss of nutrition, the lens fibres are converted into different solid and fluid materials; the nucleus becomes hard and dry, while the cortex may be softening to the state of a semi-fluid pulp, with remains of opaque fibres, molecular substance and fatty tissue, especially in its hy ermature state. This is the nature of the so-called **Hard cataract.** The **Soft cataract** consists of a conversion of the lens tissue into a paste-like material, or a degeneration of it into a soft substance of a thin milk-like color with granular flocculi, corpuscles and fatty material. The former is the cataract of adults, elderly and old people; the latter is met with from birth to puberty.

The cataractous changes of the *capsule* are probably the result

of inflammatory action; they are mostly attended by a secondary degeneration of the lens, or vice versa accompany a fluid degeneration of the lens. In **Traumatic cataract**, which originates in consequence of a blow or other external injury to the eye, the capsule is nearly always opaque, and the cataract is of the soft kind; in the uncomplicated cataract of the aged, however, it is seldom altered.

The OBJECTIVE SYMPTOMS of these different affections can clearly be elucidated only by the ophthalmoscope. They are important to the eye-surgeon, who will consult special works thereon, but even the naked eye is capable of detecting opacities of the lens. The following are the SUBJECTIVE SYMPTOMS: As soon as the opacity upon either the lens or the capsule is dense enough, to interfere with the rays of light, the first symptom is indistinctness of sight or mistiness; at first distant objects are seen as if through a mist or fog, or a bit of glass that had been breathed on; after awhile this mistiness envelopes near objects also. The adjusting power is lessened, because of the lens losing its elasticity. The patient now sees better in twilight; then the pupil expands and more rays are allowed to pass through the lens. For this reason the patient shades his eyes in bright light and derives benefit from wearing goggles. In some cases there is even intolerance to bright light. In other cases the objects appear doubled or even farther multiplied, and are seen in fantastic forms. This arises when portions of the lens still remain transparent, but vary in the degree of their density, whereby an irregular astigmatism is produced. Muscæ, of all shapes and sizes, and sometimes in showers are of frequent occurrence; but flashes, stars, fiery circles, bright metallic light, bright spectra like silver must be attributed to other diseases of the eye; they have nothing to do with the cataractous affection of the lens.

CAUSES.—"Defective nutrition," merely expresses, in other words, what cataract consists of, but does not tell the cause which in fact we know not. We can merely state, that cataract has been observed to develop: after external injuries of the eye; in consequence of diabetes; after fever; in consequence of other diseases of the eyes, either active or of a low type; in consequence of hereditary influences. After one eye has been attacked, the other is likely to follow.

THERAPEUTIC HINTS.—Under certain circumstances the best

and quickest relief can be afforded only by an operation, but there is no doubt that homœopathic treatment has succeeded not only in checking further development, but also in clearing up existing opacities of lens and capsule. The following are the most important remedies:

Ammon. carb., (right eye); **Baryta carb.**; **Bellad.**, (after acute inflammation of the eye); **Calc. carb.**, (scrofulous individuals); **Cannab.**; **Caustic.**, (constant inclination to touch and rub the eye, which seems to relieve a pressure in it); **Conium**, (old persons); **Euphras.**, after **Sulphur**, (congenital cataract); **Lycop.**, (after typhus; suppressed menses); **Magn. carb.**, (from left to right; previous disposition to headache and furuncles); **Phosphor.**; **Saccharum Sacchari**, (in several cases of old age); **Sepia**; **Silic.**, (after inflammation of the eye; preceding ringworms; suppressed sweat of feet); **Sulphur**, (from right to left; after cutaneous eruptions, especially suppressed itch. According to Jahr main remedy).

"**Dislocation of the lens** often results from injury and may be spontaneous. It is most commonly dislocated backward into the vitreous, though it may lie in the anterior chamber or even under the conjunctiva. The lens may be seen in any case lying in its unnatural position. When in the vitreous, the tremulous condition of the iris will call attention to the trouble."—(Geo. S. Norton).

SIGHT.

Refraction and Accommodation.

A luminous body sends off rays of light in all directions, and in whatever direction they go they always move in straight lines, unless interfered with by a medium of different density. When entering a lens they are bent towards its thicker portion; a biconvex lens converges them to a focus; a biconcave lens scatters them for the same reason. Now when parallel or even slightly divergent rays of light from an object enter the pupil, and pass through the crystalline lens of the eye, they are bent by this body towards its thicker part and are thus focussed upon the retina. In this bending and gathering of the rays of light to a focus upon the retina consists what is technically called the **Refraction** of light. It is a purely mechanical process conditioned by the transparency and biconvexity of the lens, which like any

other biconvex lens, focusses the parallel and divergent rays of light at a certain distance, according to the amount of its convexity, that is according to its refractive power. When an object is sufficiently near the eye to emit divergent rays, it is said to be at a finite distance; when, however, it is sufficiently far away to emit parallel rays of light to the eye, it is spoken of as being at an indefinite or indeterminate distance. In either case the rays are not entirely and equally parallel, and consequently the focus must vary in its distance behind the lens, either fall in front of, or behind the retina.

Only if an object were brought in the exact position from which its rays could be focussed upon the retina, it could be seen distinctly. We know, however, from experience, that for a normal eye such exact position of objects as to distance, in order to see them, is not required. The healthy eye possesses a faculty by which it brings both parallel rays and rays in various degrees of divergency, to an accurate focus upon the retina; it sees clearly and distinctly at different distances, adapting itself for the position of the object looked at; and this is called its power of **Accommodation** or **Adaptation.** The nearest distance to the eye at which a small object can be seen distinctly by the maximum of accommodation, or by its greatest effort to see, is termed "the near point of vision;" the farthest distance at which anything can be clearly discerned, is "the far point of vision." These points vary in different eyes; the interval between the near and the far point is termed the range or territory of accommodation.

Now the question arises, How is this accommodation of the eye to the various distances of objects effected? As the lens is only a passive agent of refraction, and as upon its form depends the distance where the transient rays are focussed, we must look for the means by which this change in the form of the lens is effected. And here all the latest researches agree in this, that the constant variations in the curvings of the lens, as accommodation for near and far objects requires, are brought about by the *ciliary muscle* of the eye.

Associated with this ever-changing form of the lens by means of the ciliary muscle are also *pupillary movements*—contraction for near objects to cut off the lateral rays of light, and dilatation for distant objects, the sphincter pupillæ and the ciliary muscle being in a functional connection by nerve-fibres; and to this may be added the action of the recti muscles, which in accommodat-

ing for near binocular vision, turn the eyeballs inwards, while for perceiving distant objects, they place them parallel.

Presbyopia, or Old Sight.

The constant change in the curvings of the lens, as accommodation requires, can readily be effected only so long as the lens is sufficiently soft and yielding. As, however, the lens in the course of years grows denser and therefore less capable of being acted on by the ciliary muscle in the process of accommodation, and as also its shape becomes flatter and in consequence its refractive power reduced—the near point of vision gradually recedes, that is to say: If we were able all along to see an object distinctly at a distance of four or five inches, etc., because of the greater convexity to which the lens could be shaped by the ciliary muscle for such purpose, we now have to hold the same object further off, in order to receive a distinct visual impression, showing that the lens is not capable any more of being shaped convex enough to gather the divergent rays of the near point to a focus upon the retina. The near point of vision has receded to eight, twelve or sixteen inches. Withall this, distant objects are discerned as accurately as before. This is **Presbyopia**—a diminution of accommodation for near objects, with diminution of refraction, consequent on age.

This natural change in the crystalline lens commences in early life and gradually increases with advancing years. Generally about the age of forty, the near point is eight inches from the cornea, and at about forty-five years it recedes to twelve or sixteen inches. In some instances the change sets in suddenly, so that a month or even a week will make all the difference in the condition of the eye. In such cases we should bear in mind that a rapid increase of presbyopia is also a prominent symptom of glaucoma. Still later the far point for distinct vision, too, declines, and the focal range is thereby lessened. With the loss of range, there may be loss of acuteness of vision, arising from retinal obtuseness. Presbyopia requires convex glasses, which ought to be changed as often as the progress in the change of the crystalline lens demands it. Lenses will not afford any help to distant vision, unless there be hypermetropia combined with it.

Hypermetropia.

This affection is caused by a congenital, often hereditary malformation of the eyeball, which is smaller than in the emmetropic eye; its antero-posterior diameter is shorter than that of a normal eye, consequently the parallel rays of light entering the pupil do not unite and form a focus on the retina, but fall behind it, and were the sclerotica removed posteriorly, they would converge to a point behind its boundary. Therefore, it is still farther impossible for divergent rays to be properly refracted for the function of sight. Only rays that have been artificially rendered convergent by a convex lens, are properly focussed upon the retina.

Slight degrees of this affection are often masked by the great accommodating power of the lens during youth; an abnormally distant position of the near point, however, in young persons may be taken as a very conclusive evidence of the presence of hypermetropia; after manhood the marked removal of the near point, the loss of acuteness of vision, the very decided assistance afforded to far vision by a convex lens, and the strong glasses needed for seeing small type confirm its presence.

"In hypermetropia, asthenopic symptoms, as: eyes tire easily, blurring of vision, aching in and over the eyes, etc., after using for near work, occur early and require immediate selection of the proper convex glass." (Norton).

Myopia, or Short-sightedness,

Is the opposite condition to hypermetropia. The antero-posterior diameter of the eyeball is longer than in the emmetropic or normal eye, hence distant or parallel rays of light are brought to a focus before they reach the retina and the image which is formed on the retina is blurred and indistinct. Only divergent rays, that is, rays coming from near objects, are accurately focussed on the retina. While, therefore, the myopic eye can see near objects, it cannot see distant ones well without optical aid. The myopic far-point is always at a definite distance; in bad cases it may be within a few inches of the cornea; there is in such cases little difference in the distance between it and the near point. The two are in proportion to each other, the further the far-point, the further also the near-point and vice versa.

"Myopia may be produced by a spasm of the ciliary muscle and must not be confounded with an elongation of the antero-posterior axis." (Norton).

The disposition to myopia is almost invariably congenital and hereditary; it is, therefore, a most uncommon occurrence for myopia to appear after the fifteenth year of age, and it is never acquired after the twentieth in eyes that are normal.

Its development is favored by the tension of the eye, which is inseparably connected with looking at near objects where, by the constant and strong action of the internal recti muscles to produce the necessary convergence of the optic axis for the requisite position of the corresponding portions of the retinæ, the eyeball gradually is drawn into a more or less oval shape, which finally may amount to the formation of a posterior staphyloma by atrophy of the choroid and sclerotica. Myopia is, therefore, essentially an accompaniment of civilization, where it prevails chiefly among those classes who, from childhood on, have had to use their eyes continuously in reading and writing or other close work.

In old age, when the lens grows flatter (see Presbyopia) the near-point recedes and consequently the myopic can often read again without the aid of glasses. This gain in sight is not an actual improvement of the eye; its myopic defect remains the same, but the flattening of the lens by age lengthens the focal distance which now reaches the retina. The myopic eye can be relieved by concave lenses, which ought to be selected carefully and not used too strong.

Astigmatism.

"The term astigmatism is used to express a state of sight resulting from want of symmetry in the anterior portion of the eyeballs. The rays of light do not unite by convergence and form in a regular manner in one point or focus on the retina, but reach it partially or irregularly, some of them coming to a focus in front of it, or not forming any focus, whereby circles of dispersion or diffuse images fall on the retina, and indistinctness of vision is produced." (Walton.) This irregularity in focalizing the rays of light is mainly due to assymmetry of the cornea, and in some cases also to that of the lens. The patient usually holds objects close to his eyes, as a myopic; the lines of adjoining

letters seem to cover each other; parallel lines in different directions, one set for instance being vertical and another horizontal, do not appear equally distinct but blurred; things at a distance are sometimes seen double, and a square figure will have the appearance of an oblong; in high grades of astigmatism there is chromatic aberration, so that luminous objects sometimes appear surrounded by variously colored borders. Astigmatism may be combined with myopia or hypermetropia. It is often hereditary or may be caused by the removal of the pupil from its central position either from accident, disease or in consequence of an operation; by the slightly irregular manner in which the corneal flap may heal after an operation for the extraction of cataract; by the irregularity in the corneal curves produced by inflammation of the cornea; by the dislocation of the crystalline lens from accident or disease.

Its remedies are carefully selected cylindrical glasses, and in case of inflammatory diseases of the cornea or traumatical causes, carefully selected medicines. Compare Corneitis, etc.

Asthenopia.

"This may be defined to be inability to maintain the adjustment of the eye for short distances, for a sufficient period without fatigue." (Walton). The asthenopic eye gets tired when employed any length of time in reading, writing or other close work, especially by insufficient or artificial light; the ciliary muscle, which is the muscle of accommodation, cannot stand the strain required by the smallness of the objects and the close approximation of the eyes to them; it relaxes and the crystalline lens flattens, whereby the focus from the objects is changed and the objects become indistinct and blurred. A little rest relieves it all; the ciliary muscle is ready again for shaping the lens to the necessary convexity—but soon gives out again. At last a pressure and fulness is felt in the eyes and a tension and pain in the forehead; sometimes the pupils become contracted and the conjunctiva reddened. The cause of all this is want of sufficient refraction in the eyeball, which is principally found in a *hypermetropic formation* of the eye, and therefore there is a close relationship between the two affections; in pure forms of asthenopia, according to Walton, hypermetropia is never absent. This form is called **Accommodative asthenopia.** Asthenopic symptoms

will also occur when the ciliary muscle, in consequence of illness or exhaustive diseases, becomes paretic, or when the internal recti muscles, from relative or absolute deficiency of power, cannot maintain the proper convergence of the eyes for near sight; this is called **Muscular asthenopia.** The accommodative form depends chiefly on the degree of the existing hypermetropia; it may develop itself at the early age of ten. The muscular form depends more on general conditions of the system, and as exciting causes may therefore be mentioned for the first: long-continued application of the eyes to close work, especially by insufficient light; and for the second: general debility; mental troubles; dissipation, etc.

THERAPEUTIC HINTS.—The accommodative form requires convex glasses for the relief of the existing hypermetropia; the muscular form also needs correction of the usually existing anomaly of refraction by suitable glasses. A study of the general state of the debilitated system will be required for the selection of the corresponding remedy.

Acon., eyes hot and dry from overuse; relieved temporarily by cold water.

Apis, stinging pain and lachrymation.

Arg. nitr., blepharitis; hypermetropia and weakness of the ciliary muscle.

Calc. carb., fatigue and pain from using the eyes; on looking at near objects they become indistinct and blurred; general Calcarea symptoms.

China, debility after exhausting sickness.

Cina, spasmodic twitchings of the orbicular muscle; twitchings in the muscles of the face; from intestinal irritation by worms or otherwise; after masturbation.

Cinnab., pain from inner canthus, extending above and around the eye.

Conium, cannot bear bright light or heat.

Euphras., blurring of vision relieved by winking.

Gelsem., especially in the muscular form from weakness of the external rectus.

Ignat., nervous, hysterical females; onanism.

Jabor., asthenopic symptoms, especially dependent upon an *irritable* condition of the ciliary muscle. (Norton).

Lilium, pain in forehead; photophobia; blepharitis; astigmatism.

Natr. mur., stiff and drawing sensation in the muscles upon moving the eyes; the eyes smart, itch and burn; feel best on being kept shut and pressed upon; muscular form.

Nux vom., after dissipations.

Phosphor., dull pain deep in the eyes; black spots before the eyes, especially when looking at bright objects and by artificial light; better in twilight.

Rhodod., weakness of internal recti; darting pains through head and eyes, worse before a storm.

Rhus tox., after great strain of the eyes; muscular form.

Ruta, aching in and over the eyes after straining the eyes at fine work; heat in the eyes and lachrymation after close work; accommodative form.

MUSCLES AND NERVES.

Mydriasis.

This is a dilatation of the pupils. The iris is chiefly composed of non-striated muscular fibres, arranged in a circular and in a radiating direction. The circular fibres are supplied by the third nerve, and act as a sphincter pupillæ, while the radiating fibres are supplied by the sympathetic nerve, and increase the aperture when stimulated to contract. Mydriasis may therefore be caused either by a paralysis of the third nerve or by stimulation of the sympathetic. One of the differences between the two is, that with the paralysis of the third nerve there almost always is associated a paralysis of the ciliary muscle, which more or less destroys the power of accommodation. Its exciting CAUSES may be either peripheral, from exposure to cold winds, blows, etc., or cerebral, in consequence of effusion into the ventricles of the brain, concussion of the brain, basilar meningitis, diseases of the cerebellum, apoplectic effusions at the base of the brain, glaucoma and certain narcotics.

Myosis

"Is a persistent regular contraction of the pupil below its medium size, with immobility and without change of structure in the iris or in the eye." (Walton). It is caused either by a paralysis of the sympathetic nerve or by an irritation of the third. In the

first case there probably are diseases of the neck, or in the spinal cord, which involve the cervical sympathetic, at the bottom of the trouble; in the latter case the cause lies in morbid conditions of the brain, which irritate the third nerve.

Special **THERAPEUTIC HINTS** cannot be given. Mydriasis, as well as myosis, are mere symptoms of other more deeply seated disorders, which must be studied accordingly. Our repertories show a number of remedies for both of these symptoms.

Ptosis, or Falling of the Upper Eyelid.

This affection may be due: 1st, to a paralysis of the levator palpebræ muscle, which is under the control of the third cerebral nerve; 2d, to a loss of muscular power in the levator, consequent on age; 3d, to a falling of the eyebrow, in consequence of paralysis of the occipito-frontalis muscle; 4th, to a congenital deficiency of the levator palpebræ; 5th, to a hypertrophy of the palpebral integument; or, 6th, to chronic ophthalmia with granular eyelid.

THERAPEUTIC HINTS.—The most frequently indicated remedies are: **Caustic., Gelsem., Hyosc., Nux vom., Plumbum, Rhus tox., Sepia** and **Zincum.** A congenital deficiency of the levator palpebræ cannot be reached by any medicine. For granular eyelid, compare the corresponding chapter.

Strabismus, or Squint.

"Strabismus is a deviation of the visual axes. The axis of the one eye being directed to the object desired to be seen, while that of the other is turned too much inwards, (*internal squint*) or outwards (*external squint*)." (Walton.)

Internal squint is the most frequent of the two. It may arise from more or less paralysis of the external rectus, generally of the one eye, exceptionally of the two; or from some functional change, some shortening, at first dynamically, afterwards at a varying period, organic shortening, with or without hypertrophy of the internal rectus; from lesion of the brain or of the ocular nerves in cases of inflammation, softening, apoplexy, hydrocephalus, scrofulous tubercles, epilepsy; from intestinal irritation by worms; during teething; from visual defects, in consequence of inflammation within the eye or of the cornea; from diseases which

damage the function of the external rectus, such as tumors, traumatic or specific inflammations, abscesses, neuralgia. Its most frequent cause is hypermetropia.

The **External or Divergent squint** seldom appears before puberty, except in connection with a diseased brain. It mostly arises from some form of impairment of vision affecting either one or both eyes, or from a difference in the refraction of the two eyes, or some disparity between them in the function of sight, all of which is commonly associated with myopia. Its direct cause in most cases is paralysis of the motor oculi nerve. The external rectus muscle is influenced in the same way by effusion in the orbit, tumors and all mechanical lesions of its muscles, and by cerebral disorders like the internal muscle in inward squint.

THERAPEUTIC HINTS.—Cerebral irritation with corresponding symptoms require: **Agar., Bellad., Cicuta, Gelsem., Hyosc., Nux vom., Stramon., Sulphur.**

Alum., recommended by Jahr if Bellad. and Hyosc. have failed.

Cicuta, after convulsions.

Calc. carb., after ophthalmia, or overstrain by close work; strumous subjects.

Cyclam., after unsuccessful operation; after convulsions, or measles.

Intestinal irritation from worms or other causes require:

Cina, picking of nose; restless sleep; grating of teeth; short hacking cough through the night.

Cyclam., see above.

Sepia, nocturnal enuresis during first sleep.

Spigel., itching at the anus.

Sulphur, nightly itching of the skin; cutaneous eruption; constipation.

Suitable glasses may be of great help.

Surgical operation is required where there is an organic shortening of the internal or external rectus; paralytic squint is least benefited by it, and in mere nervous disturbance it is not called for at all.

Nystagmus, Trembling of the Eyeballs.

It is an involuntary, rhythmical motion of the eyeball, mostly from side to side, sometimes in an oblique direction, without im-

pairment of the muscular movements. These oscillatory motions are nearly always permanent during the waking hours, but do not interfere with the simultaneous action of the two eyes; sometimes they are associated with internal squint. The disease nearly always arises in infancy, and is frequently seen in connection with congenital cataract, or other states of the eye which impair sight. It is common to the Albinos, when there is an absence of the pigmentum nigrum. Although ascribed to a morbid condition of innervation, its true nature is unknown.

Luscitas, or Fixed State of the Eyeball,

Is limited or lost power of movement of the eyeball, which remains in a fixed position either with or without deviation from the orbital axis, and cannot in any degree follow the movements of the other eye. Luscitas is a symptom either of paralysis of the third nerve, when the eyeball is turned outward by the abductor muscle, or of paralysis of the abductor, when the eyeball is turned inside—all consequences of brain-disease, chronic hydrocephalus especially. But external causes, such as injuries to the muscles of the orbit or to their nerves, tumors, staphylomatous enlargements of the sclerotica, may also fix the eyeball in any direction.

Morbid Winking

Is a clonic spasm of the orbicularis palpebrarum muscle, and frequently found in connection with severe conjunctival irritation; sometimes it is of constitutional origin.

Twitching of the Eyelids, or Quivering,

Nearly related to the above, may effect one lid or both. It sometimes is so slight that it cannot be seen, but may plainly be felt; although annoying, it seldom is attended with pain, and is usually the consequence of deranged digestion or feebleness from overwork.

Blepharospasm.

The eyelids are violently and persistently closed. It is nearly always associated with intolerance of light and discharge of tears.

Its sources are various. They may arise in the eye itself, or in other organs, and transmit their influence to the brain at the origin of the portio dura, through the fifth nerve, the optic, the vagus, the sympathetic, or directly from cerebral disturbance. Thus we see it produced by trichiasis, strumous conjunctivitis, corneitis, retinitis; carious teeth, supra-orbital neuralgia; a blow on the head or other injury; hysterical irritation. It may affect one or both eyes, it may last a long time uninterruptedly or in spells; it may be associated with spasm of the facial muscles.

THERAPEUTIC HINTS.—Nystagmus—**Hyosc.?**

Morbid winking has been relieved by **Agar.** and **Ignat.**

Twitching by **Cina, Physost.**

Blepharospasm by **Bellad., Viola tric., Symphitum** (after a blow), and other remedies, which must be selected according to the individual state of the patient. Compare the chapters which treat of its sources.

Neuralgia of the Eye.

It is usually an affection of the ophthalmic and superior maxillary division of the fifth cranial nerve, which supply the eyeball the ocular appendages, and the circum-orbital region. One or the other of the branches of these nerve-trunks may be affected. Most frequently we find it located in the upper eyelid, the middle of the eyebrow, the nasal extremity of the superciliary arch, the inner canthus or the temple; or it follows in the direction of the supra and infra-orbital nerves; or it is entirely intra-ocular without any affection of the nerves radiating from the orbit.

The first of these varieties is often intermittent or remittent and may become chronic; it may alternate with nervous pains in other parts of the body. The CAUSES are frequently obscure, often however traceable to malarial influences or exposure to cold. The second variety may arise out of the effects of the fangs of carious upper back teeth. When the pains are deep-seated, its origin is intra-orbital or even intra-cranial and may arise from thickening of the dura mater, orbital or cranial exostoses, aneurisms or tumors.

THERAPEUTIC HINTS.—These different forms and causes show that not a few remedies may present themselves for our considera-

tion. However, to avoid repetition, I refer to the chapter on neuralgia of the face.

ORBIT.

Orbital Cellulitis.

"Inflammation of the orbit is usually severe and acute in character; is marked by great swelling of the lids, extensive chemosis, protrusion of the eyeball and intense pain in and around the eye, aggravated on any movement of the eye. Movements of the eyeball are impaired. Pus soon forms, when we have an *abscess* in *orbit*, which may perforate through lids or conjunctiva. The inflammation may extend to the eyeball, producing a panophthalmitis, or to the brain, or may cause caries of orbit, etc. General febrile disturbances usually accompany the above local inflammation. Trauma is the most frequent cause. It may result from extension of inflammation in neighboring parts or from constitutional diseases.

THERAPEUTIC HINTS.—Acon., Apis, Hepar, Laches., Mercur. and Silic. may be indicated, but **Rhus tox.** is most frequently indicated." (Geo. S. Norton).

Basedow's or Graves' Disease; Exophthalmic Goitre,

Is characterized by palpitation with accelerated pulse, swelling of the thyroid gland, and exophthalmus or protrusion of the eyeballs. In its nature it has been considered by some as a morbid crasis, by others as a heart disease and by still others as a neurosis of either the cervical sympathetic or the cervical medulla spinalis and medulla oblongata. I feel, therefore, at liberty to treat of it here as anywhere else.

Autopsies have shown a considerable development of fat behind the eyeballs, which causes their protrusion; also at times fatty degeneration of the eye-muscles, probably caused by disease and stretching; and atheromatous changes of the ophthalmic artery. Changes in the sympathetic and its ganglia have not at all been of a uniform nature, and in some cases have been wanting altogether.

SYMPTOMS.—Usually this disease develops itself very slowly,

though some few cases of sudden origin have also been observed. Its first symptom in a majority of cases is *palpitation* conjoined with acceleration of the pulse, without any abnormal symptoms of the heart on physical examination; occasionally there are epigastric pulsation, increased force of the pulse in the carotids and their larger branches, especially the thyroids, and a whirring and blowing that may be heard by auscultation before the struma is developed, pulsation of the retina and in rare cases pulsation of the liver. Some weeks or months later, slowly or rapidly, *struma* is developed, a soft, elastic swelling of the entire thyroid gland, which, however, does not attain to a very great size and is moreover subject to frequent changes. The surface of the tumor is often marked by veins, greatly dilated and crowded with blood, and auscultation reveals loud blowing sounds, often increased during systole. Struma seldom appears before palpitation and still more rarely is it wholly absent. *Exophthalmus*, the third prominent symptom, makes its appearance soon after the struma—in a few cases before it—and still more rarely as the initial symptom, preceding the struma and the palpitations. It always attacks both eyes, but sometimes appears on the one eye earlier, or remains at least more prominent than on the other. It seldom is wholly wanting, while in other cases it forms the only cardinal symptom, when it is associated with other kinds of general disturbances. In degree it varies greatly, from a slight prominence of the eyeballs to an excessive protrusion of the same, that no part of the globe is covered by the eyelids and even may amount to a luxation of the globe. The eyes protrude; the eyeballs have an unusual lustre, appear stiff and gradually lose their mobility in part or wholly. But this protrusion is not at all times the same, it increases and decreases proportionately to the force of the pulsations of the heart, and sometimes may be diminished by light pressure upon the eyeball. Von Graefe has observed, that "*the upper lid loses its power to move in harmony with the eyeball in the act of looking up or down*," and he considers it a pathognomonic sign of exophthalmus, which however others do not admit, as its occurrence, although frequent, is not constant. As a secondary group of symptoms in some cases may be mentioned: dryness of the conjunctival sac, distention of the conjunctival veins, and conjunctivitis; the lachrymal secretion is often increased. In bad cases: insensibility, diffuse desiccation or even perforation of the cornea. Ophthalmoscopic ex-

amination usually shows dilatation and increased tortuosity of the retinal veins, and in some cases spontaneous pulsation of the retina. The temperature of the body has been found increased to 101.8° F. in some cases, while in others it remained entirely normal. Also nervous disturbances have been observed, but they are so varied and so little characteristic, that they may be omitted without injury to the diagnosis of this malady. Its *duration* is protracted; months and years may pass with alternate improvement and relapse; some cases get well; others hasten to a fatal issue by the consecutive changes of the heart, the permanent increased labor of which leads to dilatation of both ventricles and compensating hypertrophy. In other cases marasmus and other intercurring diseases or complications may end the scene.

Women are more subject to it than men; in childhood it is rare, it occurs mostly during the time of puberty and climacteric years, seldom later. As predisposing CAUSES have been mentioned: chlorosis, anæmia, and neurotic tendencies; as exciting causes have been found: injuries, traumatic or otherwise, and mental excitement, violent fright.

THERAPEUTIC HINTS.—As this affection is not poor in symptoms and mostly of long standing, by a careful examination we will be able to detect leading symptoms for one or another remedy, even not mentioned below.

Amyl nitr., frequent flushes of face and head; oppression of chest; tumultuous palpitation. (Olfaction.)

Badiaga. (Norton.)

Bellad., has cured cases in allopathic hands, although the doses applied were certainly too massive, as they produced headache, nosebleed and angina.

Calc. carb., in combination with a diet of nitrogenous substances relieved greatly in a case of pronounced lymphatic constitution.

Ferrum, in cases with disturbances in the sexual sphere, scanty or suppressed menses and great nervousness.

Lycopus, has relieved the protrusion of the eyes and the cyanosis, but had no effect upon the glandular enlargement, which yielded to **Iodine.**

Natr. mur., depressed vegetative vitality; despairing, hopeless feeling about the future; dryness of the mouth; sore tongue; map tongue; chronic constipation with hard stool; chlorotic symptoms, with dirty, flaccid, torpid skin; fluttering of the heart; intermitting and irregular pulse.

Secale has been successfully used by the old school.

Spongia, easily frightened, especially at night, as if suffocating.

It appears from this, that the most efficient remedies used thus far were such which are capable of acting especially upon the heart and the thyroid gland; under certain circumstances, therefore, **Baryta carb., Bromium, Cact. grand., Phosphor., Silic.** and **Sulphur** may likewise be indicated.

EARS.

Analogy between the Ear and the Eye.

At first sight, these organs appear so entirely unlike each other, that it would seem scarcely possible to discover any analogy between them; yet on closer inspection, the similarity between the two is quite striking.

As I consider this similarity in the structure of the eye and ear of great importance in clearing up the rather occult affections of the ear (the treatment of which is often very difficult), I shall point out, with some detail, the following remarkable features of similarity between the organ of sight and the organ of hearing.

The *pinna* corresponds to the *upper* and the *tragus* to the *lower eyelid.* In animals the auricle is even movable, to collect or reject sounds, as the eyelids are to take in or to keep out the light.

The *eyelashes* are represented by *the bristly hairs at the mouth of the meatus externus;* to keep out dust and insects.

The meatus externus is lined by a *semi-mucous membrane,* secreting earwax, corresponding to the *conjunctiva* of the eye, which secrets eye-butter; both are subject to similar inflammations and mucous or purulent discharges.

The *membrana tympani,* corresponds not only in function, but also most strikingly in structure, with the *cornea.* It collects sounds, while the cornea collects light; and it is, at least, of a *half*-transparent texture. The diseases to which it is liable correspond with those of the cornea: inflammation, thickening, ulceration and perforation.

Immediately back of this membrane, in the middle ear or tympanum, we find *the ossicula auris,* by which sound is broken and communicated to the auditory nerve, in the labyrinth, just as light, by means of the *crystalline lens,* is refracted upon the optic

nerve. *The middle ear or tympanum*, with its ossicula, corresponds, therefore, precisely to *the anterior and posterior chamber of the eye* with the lens.

Still further back we come into *the labyrinth* of the ear, which is filled, in its membranous portion, with *a limpid fluid*, first well described by Scarpa, and which corresponds to the *vitreous humor* of the eye; while the numerous filaments of the two branches of the auditory nerve, the vestibular and cochlear nerves, spread out into *a nervous membrane*, closely resembling that of the *retina*, so that the *labyrinth of the ear* corresponds to *the posterior part of the eye* with its vitreous humor and its retina. The nerve-membrane of the ear terminates in fine fibrils or ciliæ (Corti's mechanism), and the retina in a layer of rods and cones.

There is one appendix to the ear—*the Eustachian tube*—which starts at the tympanum, and opens into the lateral wall of the throat, and there is also one appendix to the eye—*the lachrymal duct*—which starts at the inner canthus of the eye and opens into the nose; while lastly both organs are situated in close proximity to *porous bones:* the ear on the mastoid portion of the temporal bone, and the eyes below the frontal sinuses of the frontal bone.

This striking similarity in the structures of the ear and eye at once brings the diseases of the ear (by comparing them with those of the eye) nearer to our comprehension, and may even influence the choice of a remedy in a given case.

General Observations on the Ear.

The *auricles grow pale* from fright, chills, spasms, loss of vital fluids, exhaustion and frost. A *marked paleness* of the *left auricle* denotes inflammation of the spleen.

Redness of the auricles is found in congestive and inflammatory conditions of the head and ears.

Flushes are caused by mental emotions; or occur before bleeding of the nose, delirium, apoplexy.

An habitual or frequently-occurring redness of the auricles denotes disturbed actions in the abdominal organs; or else menstrual and hæmorrhoidal affections. Hyperæmia of the auricle, and sometimes of the middle ear, is often associated with the climacteric period.

A striking redness of the auricles in *new-born children* is a sign of premature birth.

Small, inflammatory, purplish, suppurating spots on the auricles are a sign of chronic syphilis.

A slight inflammatory, painful redness of the upper part of the auricle is often the forerunner of an attack of gout.

Swollen auricles, if *inflammatory*, are caused by erysipelas, injuries, eruptions; if *habitual*, not inflammatory, it is a sign of scrofulous conditions; if *œdematous*, a consequence of abscesses or Bright's disease. The auricles are:

Hot, in inflammatory and congestive conditions of the head and ears, also in consequence of great exertion of the voice, and in diseases of the larynx.

Cold, in chills, spasms, and from exhaustion. *Auricles habitually cold* are found in weak and chlorotic individuals. In *hysteric* persons, cold auricles are the forerunners of a hysterical spasm; while in delirium and mania they denote a cessation of the paroxysm.

Discharges from the ears may originate either in the meatus auditorius externus, in the middle ears, (the tympanum), or in the cavity of the skull. They are of various characters.

If, after a *fall* or *external injury* of the head, there be a discharge of *blood*, it denotes a fracture of the skull. The ears bleed also in scorbutic affections; from too great a pressure, or from insufficient pressure of the atmospheric air, (cannon-shot; on high mountains;) from too great exertions in screaming, coughing, vomiting, straining, blowing musical instruments.

Pus or *ichorous matter* is the product of a previous inflammation, either in the meatus auditorius or in the middle ear. In rare cases the pus comes from an abscess in the brain, which has broken through the petrous portion of the temporal bone.

Thin earwax is, in most cases, the consequence of a chronic inflammatory state of the meatus auditorius externus.

THE AURICLE.

Eczema.

Various kinds of eruptions may befall the auricle, either spreading to it from adjacent parts or originating there. From among them *eczema* is the most common, differing in no way from its kind on other parts of the body. We meet it in its acute as well as in its chronic form, and very often associated with similar

eruptions on the scalp, or face or other parts of the body. It may affect the entire lobe, or select only certain portions of it; the sharp crevice behind the ear, where the auricle joins the mastoid process, is frequently its favorite seat.

THERAPEUTIC HINTS.—Baryt. carb., Calc. carb., Graphit., Hepar, Lycop., Merc. sol., Nitr. ac., Oleand., Petrol., Rhus tox., Sulphur, are the main remedies. For particulars compare Eczema of the Scalp.

By their position the auricles are naturally exposed to various external injuries, from blows, cuts, heat or cold, and they also are not unfrequently the seat of depositions of urate of soda in arthritic patients. Their lower lobe is often disfigured by hypertrophy or little, round, hard tumors in consequence of previous piercing.

THE AUDITORY CANAL AND THE DRUMHEAD, OR MEMBRANA TYMPANI.

Examination of these Parts.

The canal is not straight but curved on its anterior and lower wall and often obstructed by hair growing from its cartilaginous walls. The drumhead is placed obliquely across the canal at its furthest extremity which it shuts off from the middle ear. In consequence of the crooked structure a simple look into the ear does not give us a full view of its walls nor of the drumhead. We have to straighten its curved course and push aside obstructing hair or other impediments, as far as possible. This can best be done by an ear-speculum, which consists of a simple funnel-shaped tube, made of polished metal. There are usually three of different diameters fitted together, for the purpose of giving choice to select that which best corresponds to the dimensions of the canal under examination. Its application is the following. Draw the auricle upwards and backwards, and insert the tube by gentle turning and twisting into the meatus as far as it can be done without using force or causing pain. Keep it then in its position and illuminate through it the parts to be examined. The best light is clear daylight or lamplight; the direct rays of the sun may be too dazzling. In order to prevent the intervention of the head of the observer with the rays of light an ordinary laryngoscopic mirror or reflector fixed upon the forehead of he observer, or one of shorter focus made for the purpose of aural

requirements, or, for preliminary examination, even a common hand-looking-glass can so be held as to reflect the rays of light into the tube, that by a little management and turning of the ear-speculum we are enabled to inspect already the drumhead and the walls of the external canal in all their parts.

The membrana tympani, or drumhead, is a thin, semi-transparent, parchment-like membrane, spread obliquely across the external auditory canal at its farthest extremity. In its normal state its surface, as seen through the ear-speculum, appears concave. Its shape is that of an irregular oval disc, the long axis of which is directed from above downwards; it is attached to a well-marked bony groove upon an elevated ridge upon the bony canal —the **Annulus tympanicus**, being fixed to it by a cartilagenous ring —the **Annulus cartilaginus**, just as is the crystal of a watch to its bezel.

It is composed of "three distinct structures, the external layer being a prolongation of the skin of the meatus externus, the internal being derived from the mucous membrane of the middle ear, while between these two comes the fibrous layer, and which is itself composed of two distinct layers, the one external, the fibres of which radiate; the other internal, the fibres of which take a circular course."

"When we look at the healthy membrane, we may observe at its uppermost edge a whitish prominent part, the short process of the malleolus, and extending from this downwards and backwards nearly to the centre of the membrane; we see a whitish or pale yellow stripe, and which is the malleus handle, widening out at its lower end into the form of a spatula. In front of and below the manubrium we see a triangular reflection, the cone of light, its apex being at the *umbo*, or deepest point of the convexity of the membrane, its base forwards and downwards towards and slightly short of the periphery; and then we may, on looking closely, sometimes see shining through the membrane the promontory of the middle ear, and the long process of the incus." (Cooper).

The color of the membrane is a peculiar gray of different shades, conditioned by its transparent nature, by the bodies which lie behind it and the light which strikes upon it. If the mucous membrane which lines its internal surface, or that of the entire middle ear is congested, we find the natural gray mixed with a faint or deep red; or with a yellowish tint when the

middle ear is filled with yellowish secretion. Indeed pathological changes have a marked influence upon the color of the membrane. So also is the natural soft gloss of the membrane greatly altered or even extinguished by pathological processes. The brightest reflection from the healthy membrane is the "cone of light," a triangular reflex of light in the anterior and inferior quarter of the membrane, which has its apex in the umbo and its base near along the periphery of the membrane; it is analogous to the reflex of light of the cornea. Its locality and brightness too changes from various pathological conditions.

The External auditory canal is lined by a continuation of the external skin, which grows thinner as it approaches the drumhead, but is not changed to a mucous membrane. It is studded by numerous sebaceous and ceruminous glands from which the earwax is derived.

Earwax Diminished or Increased.

The lining of the auditory canal being a continuation of the external skin, great *dryness* of the same is usually found in persons whose skin in general is of a dry nature. It seldom has anything to do with nervous hardness of hearing. It may, however, be in connection with turbid processes within the middle ear, especially the drying up and hardening process of its mucous membrane.

An *increase* of earwax may be caused by frequent picking and boring with hard instruments in the ear, whereby a congested state of its lining membrane is induced; we find it in persons whose scalp produces much sebaceous secretion and who are inclined to sweat easily about the head; it is sometimes connected with a chronic eczema of the canal. Its accumulation usually goes on slowly and the forming of hard plugs of cerumen takes frequently a long time, the patient being not at all aware of their formation, until a gradually increasing deafness reminds him of something wrong in his ears. In other cases indurated earwax causes quite annoying symptoms. Besides hardness of hearing, amounting sometimes to deafness, there is great itchiness of the meatus, or a feeling of fulness and heaviness in the head, or there are spells of pain deep in the ear, and in some cases even serious attacks of vertigo. These attacks of vertigo in consequence of hardened earwax are caused by its pressure upon the

drumhead, which is propagated by the chain of the ossicula to the fluid of the labyrinth. It is a symptom also of other affections of the labyrinth.

The hardened plugs of cerumen consist either of an amorphous, dark brown-red mass, principally made up from the secretion of the sebaceous and ceruminous glands, or they are strongly mixed with scales of the epidermis and in old persons with hair; some old plugs, which shine like mother-of-pearl, are mixed with cholesterin; and in still others we find an admixture of cotton, seeds, dirt and other substances from the surrounding atmosphere. There are, however, cases where the hardened masses which obstruct the auditory canal have originated in the middle ear, and consist of dried pus mixed with blood, in consequence of catarrh of the middle ear and perforation of the drumhead; in still other cases the plugging up material consists of accumulated masses of fungi or the formation of polypi. All this must be borne in mind. Deafness from hardened plugs of cerumen will certainly be cured by the removal of this obstruction, while in complications with affections of the middle ear this is, by far, not so certain. Here the tuning fork will give us the best instruction. When deafness is caused by mere obstruction of the external meatus, the tuning fork vibrating on the vertex is heard *better* in the *obstructed* ear, contrary to the patient's expectation. When, however, we find that it sounds louder in the ear which is not affected or is heard, at least, no better in the obstructed ear, we may assume that there is some complication in the inner ear, and need not expect a full return of hearing after the removal of the obstruction.

THERAPEUTIC HINTS.—Plugs of hardened earwax must be removed and to do this there is nothing so expedient and harmless as injections of luke-warm water, by a suitable ear-syringe. It is not necessary to do it forcibly and if, as in some cases, the plug is very hard, and adheres very tightly to the walls of the canal, it is better to take for its accomplishment two or three sittings and in the meantime have the hardened substances softened by occasional application of warm water, than to try to force it in one sitting. "Carbonate of soda added to the warm water hastens the removal of cerumen." (Houghton.) Often the hearing may be worse and a feeling of fulness come on after the first sitting, in consequence of the swelling of the hardened mass, and the en-

tire closing up of the canal. The patient ought to be advised of this possible seeming aggravation. After the earwax is removed it will always be advisable to put some cotton or wool into the ear in order to protect the drumhead from shrill sounds and cold. But why does the earwax accumulate and harden in some persons, and not in others? There surely must be some constitutional reason for it, which we must try to mend, otherwise the same process will go on again. The following remedies must be considered:

Carb. veg., "has served me well in malsecretion of cerumen with exfoliation of dermoid layer of meatus." (Houghton.) Discharge of flesh-colored, offensive moisture from right ear; deficient or badly-smelling cerumen.

Conium, accumulation of earwax, looking like decayed paper (scales of epidermis) mixed with pus or mucus, or blood-red; hardness of hearing ceasing when the wax is removed and returning with the wax.

Graphit., in young persons with habitual herpetic eruptions in the meatus; or meatus dry and scabby.

Laches., want of wax; ears very dry.

Mur. ac., accumulation of wax which is dry and hard, and of a brown-red color, with hardness of hearing.

Petrol., large quantities of thick or thin wax; sensation of rushing of water in the ear; old aged persons.

Furuncles of the External Canal.

They correspond entirely to boils on any other part of the body. Starting at first as an inflammation of a hair-follicle or of a glandular follicle, by spreading, the surrounding subcutaneous connective tissue is drawn in the same process and a limited abscess is formed. In the auditory canal their size is naturally still more limited; they may, however, for a time completely close the canal, until they break and discharge the core. They are quite painful and sometimes we find several together or following each other. They correspond to styes on the eyelids. As a diagnostic sign from abscesses, Cooper states, that when they discharge, the pillow case in the morning will be studded over with stains so closely resembling small sized buttons, as to deceive the most clear-sighted at a distance.

THERAPEUTIC HINTS.—Hepar, Merc. sol., Pulsat., Sulphur.

"**Picric ac.** is as near a specific for small furuncles in any part of the body as any remedy can be. In the meatus externus it aborts the furuncle if seen early and mitigates, if advanced, as well as corrects the habit." (Houghton.) "Furuncles in external auditory canal dependent upon mental overwork." (Geo. S. Norton).

Otitis Externa, or Diffuse Inflammation of the Auditory Canal.

In its **Acute form** it commences frequently with itching, heat and a sensation of dryness in the ear, which gradually changes to a dull pain or a boring and tearing deep in the ear, and being generally worse in the night, deprives of sleep and causes feverish restlessness. In severe cases the pain may extend all around the ear and to the corresponding side of the head. A jar from sneezing or coughing, or the motion of chewing or gaping make it worse. The hearing grows duller in the degree in which the outer lining of the drumhead becomes involved. On inspection we find it congested and swollen and also the lining of the canal; gradually exudation ensues, which at first is watery but finally becomes yellowish and purulent. With the establishment of otorrhœa the pain decreases, the epidermis loosens and the canal fills up with the products of desquamation. This state of things may gradually wear off and heal, or it may become chronic; the otorrhœa may continue for years. Usually **Chronic otitis externa** takes its origin in an acute attack as described above; but there are cases where such acute and painful outbreaks are not remembered; very often the commencement dates back to infant life. Sometimes the otorrhœa ceases for a time, especially during summer, but comes back again with damp and cold weather or from any other exciting cause. This form is often characterized by the presence of fungi. Chronic otitis may lead to ulceration, deep opacity and extensive thickening of the drumhead, to narrowing of the external canal by hyperostosis, to polypous growths within the canal, or to an extension of the inflammatory process to the middle ear or the neighboring diploëtic bony structures, or even to the dura mater and brain. Deafness of various degrees is a usual concomitant.

The Causes of external otitis are various. Acute and chronic exanthemata; eczematous eruptions; pemphigus; irritating sub-

stances; fungi of the aspergillus kind; exposure to cold draughts. Most liable to its attacks are children.

The PROGNOSIS of an acute attack may be called favorable; the chronic form is mostly difficult to manage.

THERAPEUTIC HINTS.—As soon as otorrhœa has commenced, great care should be taken to keep the ear clean. Occasional injections of luke-warm water, administered carefully, are of great benefit. "Aurists are now beginning to advise dry applications, avoiding warm water, except in acute troubles." (Houghton.) As regards the remedies, compare Otitis Media.

THE MIDDLE EAR.

The cavitas tympani is bounded *exteriorly* by the drumhead; *interiorly* by the wall of the labyrinth; its *roof* divides it from the brain; under its *floor*, which is very irregular in shape and greatly varying in thickness and compactness in different persons, even sometimes in the two ears of one and the same person, lies the vena jugularis interna; on its *posterior* wall we find the inlet to the antrum mastoideum, and on its *anterior* wall, nearer to the roof than the floor, just opposite to the antrum mastoideum, is the mouth of the Eustachian tube.

The entire cavity is lined by a mucous membrane, which is smooth, whitish, very thin and tender. It does the service of the periosteum, as it contains the vessels which nourish the bony structure underneath.

The antrum mastoideum and the numerous air-containing cells of the mastoid process are a kind of air-reservoir and resonator, a very important appendix to the middle ear, as by it the sonorous vibrations are more or less controlled. The Eustachian tube on the other hand is the draining canal for the secretions of the middle ear, and also its ventilation tube. For its outlet, which in grown persons resemble the mouth-piece of a trumpet, opens into the naso-pharyngeal cavity, where it is constantly exposed to the stream of atmospheric air during respiration, by which communication the air in the middle ear is kept in the nearest possible equal tension with that of the atmosphere.

Examination of the Middle Ear.

1. By means of the Ear Speculum.—We can ascertain by its application the color and condition of the drumhead. When it is of

a reddish tinge, there is inflammation of its inner lining, in consequence of catarrh of the middle ear; when it bulges there is an accumulation of mucus or pus behind it; when it is perforated we may be able to view the condition of the ossicula behind it.

2. By means of Valsalva's Method.—This consists of a forced expiration by the patient himself, by keeping mouth and nose tightly shut. The effort of blowing without allowing the air to pass out either of the mouth or the nose forces it into the Eustachian tubes, through which it enters into the ears where it causes a sense of fulness and a crackling in the drumheads, which from the internal pressure are made to bulge, provided the Eustachian tubes be pervious. If this sense is not produced, or only in one ear, we know that then and there the Eustachian tube or tubes are closed. This method requires intelligent patients. "In many cases the testimony of the patient is negative as regards the passage of air, when test with the watch shows that it did pass into the tympanum." (Houghton.)

3. By means of Politzer's Method.—This consists of blowing, by means of an india-rubber bag with a tube, a current of air into one or both nostrils of the patient in the moment when he is made to swallow a sip of water. The nostrils, of course, must be held shut so that the current of air cannot return through them, while the act of swallowing closes the upper portion of the pharynx, preventing the air from escaping through the mouth. Thus it has to pass through the Eustachian tubes into the ears of the patient, of which he will be cognizant by a certain fulness and pressure in the ear, or in case of perforation of the drumhead, by a whistling sound and a simultaneous ejection of collected mucus into the external meatus. This method, too, requires intelligent patients, but it excels over Valsalva's method in this, that it acts more energetically.

"Politzer's method of inflation can be made available without the use of water in most cases by directing the patient to close the mouth and blow steadily as in the act of whistling, or blowing out a candle. In children the tympanum can usually be inflated without either expedient; a forcible emptying of the air-bag will dilate the Eustachian tube and fill the cavity."—(Houghton.)

4. By means of Catheterism.—It consists of blowing air into the middle ear by means of an Eustachian catheter. Here are Kramer's directions for the introduction of this instrument. "As a

rule, the catheterism of the Eustachian tube should be accomplished with one of the catheters of size 1 to 4, introduced through the corresponding nasal meatus of the ear, that is to be examined. For this purpose the patient is to be placed upon a chair with a common back, or with one somewhat higher than usual, in order that the head may be supported." "After the patient has blown his nose (partly for the purpose of clearing away a too abundant secretion, partly, in case the nose is too dry, to moisten it, and thus enable the instrument to slide along it with greater facility), we dip the catheter into pure olive oil, and blow through it to assure ourselves of its permeability. The head of the patient is then fixed with the left hand; the catheter is held with the thumb and finger of the right hand close to the funnel-shaped extremity, in such a manner that the ring attached is downward; the beak is placed in the nasal meatus, resting upon its floor, close to the septum, with the convexity upwards. From this point it is pushed backwards with a very light hand, sweeping as much as possible along the floor of the nostril, with continual elevation of the handle, till the instrument becomes horizontal and its extremity rests against the posterior wall of the pharynx. The thicker the catheter, the more easily are these movements executed."

"Irregularities in the form of the inferior turbinate bone and strong lateral displacement of the septum may render the first introduction of the catheter very difficult, and test severely the delicacy of the sense of touch in the hand of the operator. As the point of the beak arrives at the posterior wall of the pharynx, the funnel-shaped end of the catheter is to be raised a little above the horizontal line, and at the same time to be lightly withdrawn. The beak then sinks and rests upon the posterior wall of the soft palate, which at that instant contracts, performs a swallowing movement, raises itself, and when assisted by a quarter turn upon its axis from within outwards, lifts the beak of the instrument into the tube."

"If this rapid movement is not successful in the hands of an inexperienced person, the beak of the catheter must be conducted back to the upper part of the pharynx, in order that it may be slowly drawn forwards and turned at the same time laterally a quarter turn upon its axis towards the outside, by which means the ring of the funnel-shaped end is directed horizontally. It now slides over and into the swelling of the tube itself, where the beak of

the catheter is directed, with its cavity against the anterior swelling of the tube, and here it hooks into it and can be clearly felt to be grasped by it upon quickly withdrawing it. The catheter lies here quite conveniently, being in no way a source of annoyance to the patient, even in speaking, in swallowing, or in any of the movements of the head. For the sake of security we now elevate the beak of the catheter above the horizontal line, directing it upward and outward, the position of the beak being determined and rendered evident by the direction of the ring upon the funnel-shaped end."

After a successful introduction of the instrument, the operator blows either with his mouth or by means of an india-rubber ball into the tube, through which the current of air is transmitted into the middle ear. On listening during this operation by either putting the ear to the ear of the patient, or by means of an *otoscop*, we hear the air rush in and beat on the drumhead, which produces a harsh sound when the drumhead is very dry, and a soft or moist sound when the drumhead is moist. A thin, interrupted, or whistling sound indicates an obstruction of the Eustachian tube; a rattling noise, as from some distance, indicates that the Eustachian tube is lined with mucus; a rattling sound, which appears to originate nearer, indicates a collection of mucus or pus in the middle ear; a fine, sharp whistling, with ejection of pus into the external meatus, indicates perforation of the drumhead; a distant, faint and indistinct noise proves that the air does not reach the middle ear at all, either because the catheter is not correctly inserted into the outlet of the Eustachian tube, or because there exists an obstruction in the tube which the air-douche cannot overcome.

5. **By means of the Watch.**—If we want to ascertain the distance at which a patient is able to hear, we must use an instrument which gives a sound always of the same nature and strength, and which can easily be held at different distances from the ear, to be examined. Such an instrument is the watch. We commence by holding it at a distance and bring it gradually nearer to the ear until its tick is perceived; the reversed order might give rise to mistakes. As soon as the patient can indicate the tempo of the tick, we are sure that he hears it, and we know the distance in which he hears by exact measurement.

6. **By means of the Tuning-fork.**—It is a known fact, that the sound of a watch or a vibrating tuning-fork, when placed on the

bony structure of the head or on the teeth, is heard at once louder as soon as we shut the ears, by lightly inserting one finger into each ear. If we close only one ear, we hear the sound louder on this side than on the other. This physiological fact has been made use of in the diagnosis of ear diseases, where, in some cases, it gives valuable hints.

The same effect, namely, which is produced by closing the ear with a finger, must be brought about by any morbid obstruction within the ear which interferes with the normal conduction of sound. And what prevents the sound from entering *into* the ear, must necessarily prevent the sound-waves also from passing *out* of the ear, when produced by and conducted to the inner ear by vibrations of the skull-bones; consequently they must be reflected back to the labyrinth and thus be perceived doubly as loud.

The causes, which may act similar to an artificial closure of the external meatus, are various. It may be a collection of cerumen, a foreign body, or a furuncle in the external canal, or obstruction of the Eustachian tube, or myringitis, or thickening of the drumhead; it may be a collection of secretion about the ossicula, or a want of flexibility, or even a partial destruction of the same, or a softening or thickening of the membranes of the fenestræ to the labyrinth. In any of these conditions the patient will surely hear the tuning-fork, which, by the way, gives the best and truest results, when placed on the median line of the top of the head, *loudest* in that ear which is thus affected.

If the patient, on the contrary, should hear the tuning-fork better in the sound or comparatively well ear, and less distinctly in the affected one, we may assume with tolerable probability that the affection of the bad ear consists of a loss of sensibility of the Acusticus in the labyrinth.

However, even here we must not be too rash in our conclusions, and remember that there is a great difference in the capacities which patients, and even persons in health, manifest with regard to their power of distinguishing the vibrations of a tuning-fork placed upon the head. Aged persons as a rule have much less capacity of perceiving the vibrations of a tuning-fork, than persons below fifty years of age. It will be well in all cases to place the tuning-fork as a controlling experiment, also upon the front teeth of the lower-jaw. A peculiar observation of Von Trœlsch is, that the tuning-fork, when placed on the head, very quickly ceased to vibrate in cases of a very unfavorable nature.

Otitis Media.

Under this name I intend to treat what Von Trœlsch has separately and elaborately described as simple catarrh and purulent catarrh of the middle ear. Both forms represent an inflammatory state of the mucous lining of the cavity of the middle ear, the mastoid cells and the Eustachian tube, either in part or in toto. The first is the lighter form, producing a mucous secretion which, however, at times may be mixed with pus and blood; the second is the more serious form, characterized by its purulent secretion, and mostly ending in perforation of the drumhead. It may be the result of simple catarrh, and I do not find any characteristic signs by which the two could positively be distinguished from each other at the commencement.

The catarrh of the middle ear is either *acute* or *chronic*. Its **Acute form** is mostly very painful; only exceptionally it runs its course without pain, especially in tuberculous individuals. The pain is felt deep in the ear, is sometimes excruciating and extends over the whole of the affected side of the head; it is usually not increased by pulling at the auricle or by pressure upon the parts before the ear, but gets decidedly worse from swallowing, or any quick movement of the head, or any concussion from a hard step, and at nights. If the mastoid process becomes involved, there is pain in that region and sensitiveness to pressure, and according to Cooper, even at an early stage "we can find a little gland situated midway over the mastoid process and on a line with the anterior opening of the auditory canal, immediately behind the auricle, become tender and swollen, while its immediate surroundings are insensitive to pressure." This inflammatory process is further attended by *high fever* and *sleeplessness*, when it may indeed simulate an acute meningitis; by *deafness* of various degrees, developing either suddenly or gradually, and caused by the exudation which covers the ossicles and destroys their natural mobility; by "*catarrh in the head.*" In fact it may have spread from a catarrhal inflammation of the nasopharyngeal mucous membrane, through the Eustachian tube into the middle ear.

There is no age exempt from it, but in childhood it is especially prevalent, though it is often not recognized.

I might for its diagnosis in little children draw the attention to the following Symptoms: high fever; great restlessness; cry-

ing and screaming without apparent cause, sometimes in spells or incessantly for days. The child gets worse from any motion, especially of the head, from being rocked, from swallowing and especially when sucking. In fact it cannot be made to suck, it lets the nipple go at each attempt of drawing. Often the little ones bring their hands automatically to the affected side of the head. In some cases the pressure of the exudation within the ear causes vomiting, somnolence alternating with great restlessness, delirium, partial or entire loss of consciousness, convulsions of the limbs or of the facial muscles. If all this is complicated with an exanthematic fever, or typhoid fever, pneumonia or bronchitis, its diagnosis is indeed difficult. A nasal catarrh or an angina might better lead to its discovery. At all events it will be well to try the application of warm water to the ears in suspicious cases, which gives more or less relief if the ears are affected. An examination of the auditory canal in otitis media by the ear speculum reveals a slight redness of the canal near the drumhead; the drumhead itself appears slightly reddened from its congested mucous layer inside, or sometimes shining and red, like a polished copper-plate; afterwards or sometimes from the first its mild lustre grows dimmer or is lost entirely and with it also the cone of light. When the secretion in the middle ear increases, the drumhead is marked by single radiating blood-vessels and partial bulging, especially of its upper and posterior portion. Sometimes the collected pus shines through the drumhead and gives it a yellowish appearance. Externally we find swellings of the glands around the ear and redness and swelling of the naso-pharyngeal mucous membrane. Otitis media terminates often in perforation of the drumhead.

Its CAUSES are exposure to cold, which especially in persons prone to catarrhal affections, will often excite this complaint. We find it frequently associated with tuberculosis, syphilis, exanthematic fevers, typhoid fever, diphtheritis and croup; we must not lose sight of it during the process of dentition.

It yields in most cases kindly to homœopathic treatment.

THERAPEUTIC HINTS.—Acon., excruciating pain often in the whole affected side of the head with high fever, dry skin, anguish, crossness and restlessness; great sensitiveness to noise; auricles hot and red; meatus externus dry and red; drumhead red, almost copper-colored, with visibly engorged and throbbing vessels; after exposure to cold wind.

Arg. nitr., ulceration of the drumhead; muco-purulent discharge from the ear; naso-pharyngeal inflammation.

Arnica, deep pain and heat extending to the mastoid process; feeling of being bruised about the ear; stitches in and about the ear; hardness of hearing. Traumatic origin; from getting chilled after being heated; typhoid fever; pyæmic symptoms.

Arsen., typhoid symptoms with suppression of discharge; lymphatics inflamed; high temperature; collapse; profuse, cold perspiration; pyæmia; pain relieved by warm applications. Burning, itching and crawling in external meatus; red, burning pustules in the canal and upon the auricles.

Bellad., sticking in and behind the ear; digging, boring and tearing; coming and going suddenly, extending to the throat; inflammation of the throat; ringing, buzzing and roaring in the ear; face flushed; eyes brilliant and staring; congestion to head; delirium; deafness or sensitiveness to light and noise; auricle red and sensitive to touch; erysipelas of scalp. Drumhead congested, enlarged vessels covering its entire surface. After exposure to cold draughts; cold footbaths; having the hair cut; dentition.

"The frequent instillation of *warm water* (as warm as it can be borne), either alone or with the addition of a few drops of Bellad., will usually relieve the terrible pains while the remedy is administered internally." (Norton.)

Borax, stitch-pains with involuntary starting; lancinating headache; itching in the ear; mucous discharge; ear hot; external meatus swollen. Children fret and cry and fear downward motion.

Calc. carb., beating pain, with knocking, buzzing and roaring; pain from ear to neck and under jaw; worse from evening till midnight; better from perspiration; thick discharge; swelling of lymphatic glands about ear and neck; perspiration about the head; scrofulous subjects; sensitiveness to cold and damp air; period of dentition; teeth carious and bluish-black at the roots.

Capsic., itching deep in ear; shooting, pressing pain in and about the ear; deep-seated pain under the ear, opposite the angle of the inferior maxillary, not extending down the jaw; mastoid process swollen; middle ear and mastoid cells filled with pus; external meatus closed; drumhead perforated.

"Capsic. is specially valuable in acute necrosis of mastoid process, or in acute symptoms arising in chronic diseases of the

mastoid. The full pulse, fever and haggard look of the patient are marked features of the picture of the drug. In abscess of the mastoid in very young children it has not proved as effective." (Houghton.)

Chamom., catarrhal inflammation; pain in paroxysms; excruciating; patient beside himself from pain; irritable and cross; screaming. Auricle red and hot; face changing color, now red and hot and then again pale; or only one cheek red and the other pale; hot sweat about the head; green, colicky discharges from the bowels; dentition.

Ferr. phosph., catarrhal affection of the Eustachian tube and ear, often combined with catarrh in chest, or bowels, or both.

Gelsem., catarrhal inflammation at the beginning; cold in head and closure of Eustachian tube; tense, dull, bound, giddy sensation in head with chilliness; stupor, drowsiness.

Kali carb., stitch-like pain and drawing, especially behind the right ear; head and right ear hot; face pale, sometimes flushed; strong fever with dizziness; chilliness, shuddering; anxiety in chest; weary in all the limbs.

Kali hydr., otitis in rickety children with great tenderness of the head.

Merc. sol., deep-seated, tearing and shooting pain, extending to the malar or inferior maxillary bone; worse from evening till midnight, by warmth in bed; enlarged, sensitive cervical glands; stomatitis or ulcerated sore throat; tongue large, flabby, indented; fauces inflamed; perspiration from least exertion; otitis accompanied by facial paralysis.

Merc. dulc., especially when the Eustachian tube and mucous membrane of the pharynx are affected.

Natr. sulph., sharp, lightning-like stitches in the ear; catarrhal affection from damp and rainy weather, cold bathing, playing on wet ground; hydrogenoid constitution.

Nux vom., great pain in ear; hardness of hearing with roaring, singing and other noises; auditory canal dry and sensitive; cold in head; itching in Eustachian tube; headache; vertigo; periodical nausea and vomiting; constipation; creeping chilliness. Better in warm, worse in cold and damp weather.

Phosphor., painful gathering, first in left and then in right ear, and shooting pains through ear worse at night; stopped up feeling in ear; itching in ears; rather deaf in left ear; deafness to human voice; reëchoing of his own words. When the ear gets

better, styes appear on eyelids, or eruption at the septum of the nose; constipation.

Plantago maj., pain in the ear with pain in the teeth and face. The pains are sharp, twinging, running. (Houghton.)

Pulsat., sharp pain, increasing gradually to great intensity, then ceasing suddenly, but soon increasing again; shooting pain; hardness of hearing; headache and toothache; carious teeth; auricle sensitive; external meatus red and swollen; profuse discharge; phlyctenular inflammation on drumhead, or ulceration and perforation; dryness of auditory canal; catarrh of Eustachian tubes; swelling of cervical glands; mild disposition; thirstlessness; constant change of position; shifting pains in different parts of the body; catamenial irregularities. Worse in evening; from heat or close room; better in open air.

Rhus tox., pain worse at night and at rest; from cold, damp and rainy weather; deafness to human voice.

Sulphur, drawing, shooting pain; heavy pressure and heat at the vertex, extending to both ears, with soreness of the brain; hot flushes of the face, followed by cold sweat; hardness of hearing, especially for the human voice. In children who suddenly cry out with pain, while they appear listless and unobservant, and where it seems doubtful whether the irritation be in the brain or in the intestinal canal. Styes; swollen nose; eruptions on different parts of the body. In complication with meningitis, eruptive fevers.

Tellur., pain day and night, of a dull, throbbing character; itching and swelling (left ear), with painful throbbing in the external meatus; discharge of a watery fluid, smelling like fish-pickle, which causes a vesicular eruption upon the external ear and neck, wherever it touches the skin; the ear bluish-red, as if infiltrated with water; hearing impaired; rough, angular disposition; after scarlet fever.

Tereb., dental caries and otitis; dental irritation, with symptoms either of cerebral or abdominal irritation; burning soreness and interstitial distention of the gums; suppression of urine and convulsions; wakeful at night, screaming as if frightened; staring look; clenching of fingers; twitching of different parts of the body; picking of nose; dry, short cough; aching of limbs and head; feverishness; changeable temper; cross and irritable. Eczema in front of left ear. (Cooper).

Verat. vir., acute otitis.

"**Paracentesis** of the membrana tympani is advisable, if the pains are not readily relieved by remedies, and if there is an accumulation in the middle ear, causing the drumhead to bulge; for a spontaneous rupture may leave a permanent perforation, while a simple puncture leaves no bad results, besides *at once* giving the patient relief from the agonizing pain." (Norton).

The Chronic Forms of Otitis Media.

Chronic catarrh of the middle ear and its appendices is often developed in consequence of acute attacks, sometimes, however, without these. It consists either of an interstitial solidification or sclerosis of the middle ear tissue (dry catarrh), or of a swelling, tumefaction and thickening of the lining membrane, either of the middle ear or of the Eustachian tube alone, or of both together, or of an ulcerative destruction of the mucous membrane and consequent perforation of the drumhead (chronic suppurative catarrh).

The **Sclerosis** of the middle ear tissue yields no discharge, therefore it is called "dry catarrh." Its nature is quite obscure and only from post-mortem examinations we know that this pathological process gradually produces a stiffness and unyieldiness of the lining membrane of the middle ear, that greatly interferes with the normal vibrating capacities of the drumhead, the ossicula and the membranes of the fenestra rotunda et ovalis. Many cases of deafness produced in this way have, no doubt, formerly been classed under "nervous deafness."

The **Moist catarrh** is characterized by hypersecretion and tumefaction of the mucous membrane. This originally thin, transparent and smooth membrane gradually becomes whitish or bluish-gray, its substance thickened, and its vascularity increased; patches of granulations form upon its surface, and fatty, cheesy or calcareous deposits in its periosteal layer. The whole lining of the middle ear may thus be changed, and the pathological process may extend into the Eustachian tube, making it impervious for ventilation.

The **Suppurative form** manifests itself by its purulent otorrhœa; the mucous membrane appears, in some cases, greatly swollen and red, in others only moderately so and pinkish-yellow, and in still others, whitish-gray and cicatrized; it is covered with pus. At times we find this morbid process attended with caries of the

bony structure and almost always with perforation and greater or less destruction of the drumhead.

The patient with chronic catarrh does not often know when his trouble began; only by a gradually increasing hardness of hearing his attention is drawn to it. The grade of deafness depends not so much on the extension of the catarrhal affection as on its location, by which it is apt to interfere more or less with the conduction of sound-waves to the labyrinth. A slight degree of catarrh, if it destroys the mobility of the fenestral membranes, causes greater deafness than a much more extensive catarrh, if it affects the walls of the middle ear or even the drumhead.

Impaired hearing, when it is better in clear and dry and worse in damp and rainy weather; when it is momentarily relieved by Valsalva's or Politzer's method, or after an act of swallowing from which the patient perceives a kind of crack in the ear; when the own voice gives a more resonant sound, or the tuning fork on the vertex is perceived louder in the affected ear—it usually denotes an affection of the Eustachian tube. When, on the contrary, under all these conditions, the degree of hearing is not altered, we may infer that the trouble is located in the articulations of the ossicula or in the fenestral membranes. A perforation of the drumhead is not necessarily attended with great impairment of hearing, even an entire destruction of the same does not cause entire loss of hearing; of greater importance in regard to hearing are the changes from aural catarrh already referred to, which affect the articulations of the ossicula or the fanestral membranes on the labyrinth wall. The drumhead, if perforated, as a rule, heals kindly, but if it is kept open from continued inflammation and discharge, or even destroyed, the middle ear loses its protection against external influences and is thus continually subjected to new irritations.

Chronic otitis media suppurativa often leads to the formation of polypi and caries. Caries of the temporal bones may lead to abscesses in the brain or meningitis purulenta, to paralysis of the face, to hæmorrhages, emboli, septic infection and phlebitis.

Its Prognosis must be made according to these different characters and states.

THERAPEUTIC HINTS.—Valsalva's or Politzer's method, or catheterism will prove beneficial in cases of imperviousness of the Eustachian tube, where it is important to procure a better venti-

lation of the middle ear, or in cases of perforated drumhead and copious collection of slime and pus in the middle ear, to cleanse it of these secretions. The main work even here will have to be done by carefully selected remedies. Besides those mentioned under the acute form of aural catarrh, compare:

Arsen., profuse, ichorous, cadaverously-smelling discharge; sinking and prostration.

Asaf., purulent discharge; after abuse of mercury.

Aurum, fetid discharge; caries of mastoid process with pain like a bruise, worse at night, by uncovering and at rest; better by motion in the open air. Meatus externus lined by fetid pus, like decay of necrosed bone; drum perforated; ossicula destroyed; middle ear denuded; fistulous openings through mastoid processes; offensive nasal discharge. Syphilis and abuse of mercury.

Baryt. carb., in cases involving the external meatus, Eustachian tube and structures of the pharynx, especially tonsils.

Baryt. mur. "has served me better than Baryt. carb. after long trials with the latter. Baryt. corresponds to an extra patency of Eustachian tubes caused by pharyngeal weakness or paresis. Clacking sound on swallowing, sneezing, or eructation, and by the two latter actions air is forced into the tympanum. Large tonsils reduced under its action." (Houghton.)

Calc. carb., profuse discharge; chronic deafness; sensitive to shrill sounds; crackling sounds when chewing; singing in the ears with snapping as from electric sparks; roaring in the ears. Drumhead perforated; edges covered with granulations, extending to external meatus; polypous growths. Sore eyes; sore, ulcerated nostrils; smell of rotten eggs as gunpowder in the nose; nasal discharge; catarrh of Eustachian tube.

Carb. veg., offensive discharge; aural meatus and drumhead inflamed; pain from ear down to neck: after itch-like eruptions.

Caustic., offensive discharge; paralysis of face; hardness of hearing; own voice reëchos; roaring and whizzing in ear; throat reddened, with increased mucus; meatus dry, with little brown wax.

Cinchona, hæmorrhage from ear after prolonged suppuration.

Conium, hardness of hearing; ears stopped up by dark brown wax and pus; pain in head; ringing in ears; enlarged liver with pain on pressure; jaundice; urine scanty, brown and bilious; constipation, alternating with bilious diarrhœa; cervical glands hard and tender.

Elaps, deafness; offensive, yellow-greenish discharge; buzzing in ears; frontal and occipital headache, worse from motion and stooping. Dull pain from nares to ears; when swallowing, pain goes to the ears; posterior wall of pharynx dry, mucous membrane fissured and covered with crusts; offensive discharge from nose; subject to epistaxis and eruption about nose and face; snuffles and pain from root of nose to forehead. Skin dry and hot, but always complains of feeling cold.

Ferr. met., discharge from left ear; chlorotic complexion; impaired hearing; murmur in left jugular vein; palpitation of the heart.

Fluor. ac., hardness of hearing, with rheumatism; ringing in the ears and numb feeling in the bones of the face, near the right ear. Hearing is better on bending the head backwards; scalp sensitive; hair matting.

Gelsem., deafness after massive doses of morphine or quinine.

Graphit., deafness; hears better when riding in a carriage; catarrh of right tube; roaring in right ear; feeling as if a skin were covering the ear inside; sensation as of a valve opening and closing in the ear; detonation and cracking in the ear when swallowing or sneezing; own voice resounds; roof of mouth and fauces red. Eruption behind the ears, with sticky secretion; eczematous eruption of the face; mucous membrane of meatus red and excoriated; or dry and scabby; or oozing of water and pus, or blood; or thin, watery offensive discharge from both ears after scarlet fever with deafness.

Hepar, detonation in the ear when blowing the nose; drawing, tearing, stitching pain worse in night and cold air; soreness of surface in spots when touched; skin ulcerates from slight injury; scabs behind the ears; on ulcerated surface white shreds, which are removed with difficulty; wants to be wrapped up warmly even if hot. Abuse of mercury.

Jodium, deafness, with tonsillitis and catarrh of Eustachian tube; indolent ulceration of the drumhead; glandular enlargement in front of the tragus; pinched, dried-up look of the face.

Kali bichr., thick, yellow discharge, mixed with stringy mucus; sharp pain coming and going quickly and changing location; stitches from ear up into the head and down into the neck; better from heat. Naso-pharyngeal catarrh; ropy mucus; "clinkers" in nose.

Kreosot., deafness with hereditary syphilis.

Laches., dryness of left ear; roaring and drumming in the ears; sense of coldness in the affected ear and side of head; dry, scurfy condition of nostrils; discharge of blood and pus from the nose.

Lycop., external meatus excoriated by an offensive discharge; drumhead destroyed. Patient cannot bear to be covered. After scarlet fever with affections of the parotid glands, eruptions, and abdominal troubles.

Mercur., deafness: offensive discharge; polypi; external meatus and drumhead inflamed; itching in the ears; vesicular eruption in the face and itching pimples on legs. Syphilis.

Merc. bijod., follicular catarrh in pharynx; enlarged tonsils.

Merc. dulc., "is more effective than the other forms of Mercur. in overcoming closure of Eustachian tube, and probably it is in this way that it relieves the deafness of advancing years." (Houghton).

Merc. præc. rub., purulent discharge; leaden heaviness in occiput; falling out of hair.

Mezer., deafness after the suppression of an eruption of the scalp characterized by the formation of crusts, beneath which, when pressed, oozed a purulent or semi-purulent fluid.

Natr. carb., hardness of hearing and roaring in left ear with caries of the left molar teeth; pain in left side of face; stiffness of neck and left shoulder; pain in small of back and left leg, worse from motion, better in rest; menses irregular, scanty; all worse before the monthly.

Nitr. ac., difficult hearing; obstruction of tube with swollen tonsils after scarlet fever; caries of the ossicula or mastoid process, from syphilis or abuse of mercury. Shooting pains; pain in bones, worse from every change of temperature, at night, on washing, on rising from a seat and from touch; better while riding in a carriage.

Phosphor., deafness to the human voice; resounding of own voice; sensation as if a foreign body were lodged in the ear; great itching in the ears.

Psorin., offensive discharge; offensive exhalation from whole body; itching in the ears; tinea capitis; scabs over fetid ulcers on and behind the ear. Similar to Sulphur but not reached by it.

Pulsat., catarrh of Eustachian tube with hardness of hearing.

Sepia, sensitive to musical sounds; herpes on the lobe, behind the ear or on the nape of the neck.

Silic., hardness of hearing, worse from washing and changing

linen; otorrhœa and bad cough after scarlet fever; constant watery, curdy and ichorous discharge, without pain, except after a fresh cold. Ulceration, caries and necrosis; pain drawing and shooting, worse at night, and from change of weather or movement; also after being long seated. Wants to have the head wrapped up. External meatus dry at outer portion, ulcerated farther in and at the drumhead. Child bores into its ear with its fingers when asleep, causing a discharge of blood and pus; it enjoys having the ear cleansed. Feeling of sudden stoppage in the ear relieved by gaping or swallowing. "Silic. is specially curative in cases in which the ulceration covers with a firm scab, under which pus abounds. One subjective symptom I have found a guiding one: hissing sounds in the ear which is perforated." (Houghton).

Sulphur, deafness, especially for the human voice; purulent, offensive discharge, worse in damp weather, after meningitis. Drawing, shooting pains in the ears; pressure in the ears when swallowing or sneezing; ulcers in the middle ear; rusty ulcers on the drumhead. Frequent styes; swollen nose; eruptions on different parts of the body; worms and itching of anus; hot and sleepless in the night; hot feet and burning of soles in bed with inclination to uncover the feet; disinclination to being washed.

Thuja, discharge which smells like putrid meat; granulations in the middle ear similar to condylomata; polypi.

Polypi.

These morbid growths are most frequently found in combination with chronic suppurative catarrh of the middle ear. It is probable that in most cases they are the product of this morbid process, although it is possible, also, that, having originated primarily, they may by constant irritation cause inflammation, ulceration and perforation of the drumhead. Their substance is very vascular, soft, red and easily bleeding when being touched; sometimes they are of greater consistence, have a smooth and shining surface, and grow grape-like on pedicles. Their size differs greatly. From mere tiny excrescences they may increase to masses which fill the entire external meatus and even overlap it. They have been found to grow from the surface of the external meatus, from the drumhead and from different parts of the surface of the middle ear. According to Von Troelsch their most

frequent origin is the middle ear; Toynbee and Wilde, on the contrary, observed them most frequently to originate on the posterior part of the external meatus. In regard to their histological nature, they are either a hyperplasia of the mucous lining of the middle ear—**Mucous polypi**—, or a proliferation of connective tissue—**Fibrous polypi**—, or a growth of a jelly-like substance—**Gelatinous polypi.** The first are the most frequent, the last the rarest form.

THERAPEUTIC HINTS.—**Alumen usta**, 3d cent., "will reduce granulation on the drumhead or inner extremity of meatus." (Houghton.)

Calc. carb., large polypi, filling the whole external meatus and overlapping it; bleed occasionally; chronic nasal discharge.

Calc. jod., offensive, thick, yellow discharge from the ear; deafness; pain in region of the heart, worse on going up stairs; frequent urging to urinate, as if the bladder were full, worse in afternoon and evening.

Merc. sol., offensive discharge; polypi in external meatus, which is inflamed.

Sanguin., Teucrium.

Thuja, large polypi with otorrhœa; bleed easily. Shooting pain in ear. Granulations in middle ear.

Nervous Deafness.

Under this name a number of ear affections have heretofore been classed, which now are diagnosed as one or the other form of chronic middle ear catarrh. Other affections still remain, which must be favored with this title, until by further experimentation and improved means of diagnostic researches, we shall have gained a more precise knowledge of their nature. "Nervous deafness" comprises all those defects of hearing which take their origin in affections of the labyrinth, of the acoustic nerve and its origin, or of the brain. Various as these affections are and may be, we seldom have the means of accurately defining their nature during the life of the patient. We meet nervous defects of hearing after the abuse of quinine; in hysteria and chlorosis; in consequence of injuries to the head; various affections of the brain.

Ménière's Disease.

The following are Ménière's observations: "1. Attack of noises of various kinds, intermitting or continuous, and impairment of hearing coming on suddenly in heretofore well organs of hearing. 2. These functional disturbances have their seat in the inner ear and are capable of producing apparent brain-symptoms, such as vertigo, stupefaction, uncertain gait, turning motions of the body and sudden falling down, attended with nausea or vomiting and fainting. 3. These attacks recur from time to time and are always followed by a higher or lower grade of deafness, even sudden entire loss of hearing. 4. It is most probable that the material change which lies at the bottom of these sudden disturbances, has its seat in the semi-circular canals." In one case post-mortem revealed an apoplectic effusion in these parts. This affection is also known under the name of **Labyrinthine** or **Auditory vertigo**, and according to Hinton is at times attended with unconscious divergence of the eyes and "seeing double" when inattentive. It seems, however, that not in all cases the primary affection lies in the labyrinth. The same symptoms have been observed when in consequence of obstruction of the external meatus, or of catarrhal affections of the middle ear, with profuse exudation, or with sudden stoppage of the Eustachian tube—an undue pressure is exercised upon the labyrinth. It is clear that in this case the prognosis is much more favorable than when the labyrinth is originally affected. We can distinguish a primary affection of the labyrinth from one secondarily caused by external pressure, by the suddenness with which it attacks without any premonitory symptoms, and by the absence of all obstructions, either in the external meatus or in the Eustachian tubes.

THERAPEUTIC HINTS.—A case of suppurative inflammation of the labyrinth after cerebro-spinal meningitis is recorded by Dr. Searle. Total deafness; straddling, gathering gait. No conduction of sound of a heavy tuning-fork through forehead and head. **Silic.**^{30} improved. **Kali brom.**$\frac{1}{10}$ cured.

There are recommended by R. T. Cooper: **Salycilate of Soda, Chin. sulph., Conium, Cicuta, Amyl nitr.**, all of which produce more or less deafness and vertigo, the leading symptoms of Ménière's disease.

"**Salycilate of Soda** seems to correspond most closely to the usual symptoms and has served me better than any other remedy." (Norton.)

The secondary form must be treated according to its causes, which compare.

Tinnitus Aurium.

Variable as sounds and noises, so also is the character of tinnitus aurium. We might, however, discern two distinct groups of tinnitus aurium: 1, noises in consequence of an irritability of the auditory nerve, and 2, noises in consequence of irritation in or on the blood-vessels or adjacent parts of the hearing apparatus which the normal auditory nerve perceives.

The first class—so-called subjective sounds or noises—are the consequence of cerebral disorders, as hyperæmia of the brain, intoxication by quinine or alcohol, faulty composition of blood in chlorosis, and exaltation or depression of the nervous system in general. But even here we may already have trespassed the proper boundary-line between the two groups; irritation of the nervous and vascular system cannot be kept asunder, as the one is dependent upon the other.

The second class—objective sounds or noises—are much more frequent and manifold in their causes. All kinds of irritations of the drumhead, or middle ear, or Eustachian tube, or labyrinth, either from circulation, inflammation, exudation, alteration of tissue, or foreign bodies, may give rise to it. *Pulsating* noises are probably mostly of a vascular origin; *ringing* noises may be caused by clonic or tonic spasms of the muscles in the middle ear or of the Eustachian tubes; the *crackling* noise in the ear during an act of swallowing originates by the contraction of the abductor tubes; many other and various noises may be caused by vibrations of pus or dried scales of mucus, or by foreign bodies on the drumhead, or by the bursting of small bubbles of slime in the ears, when shaking the head, etc.

Tinnitus aurium is often aggravated by worriment, mental and bodily depressions; by sudden changes of weather, especially damp weather; in illy ventilated rooms; after sumptuous meals, the use of spirituous drinks and tobacco, and from bodily exertions if long continued. The patient usually feels better in the open air and in the company of friends, when a lively conversation withdraws his attention from the constantly annoying noise, provided he hears well enough to participate in the conversation and the room be not overheated or badly ventilated.

Pressure with the finger upon the mastoid process or upon the first cervical vertebra changes and often ameliorates the noise in ears, while in many cases by reflex action an irritation of the trigeminus causes an irritation of the acusticus, so that many patients complain of an increase of the noise, as soon as they touch single parts of the face, or are being shaved. To this reflex action from the skin we must count also those aggravations which frequently take place in consequence of changing the linen, of standing with bare feet upon a cold floor and so on.

Tinnitus aurium is, as may be seen from its various causes, often associated with various degrees of deafness. In chronic catarrh of the middle ear a continuous noise is an unfavorable sign. Sometimes tinnitus and deafness increase and decrease in like proportions; other times tinnitus increases as the deafness decreases.

THERAPEUTIC HINTS.—It is obvious that special hints cannot be given. We must necessarily in each case consider its cause, for which the necessary hints will be found in the foregoing chapters. Tinnitus, however, may in some cases by its peculiarity hint to a remedy by which the entire aural affection may be removed. Here I must refer to our repertories and Materia Medica.

Otalgia Nervosa

Is a hyperæsthesia of the sensible nerves of the ear, and must not be confounded with the pain caused by inflammatory processes in the ear, as met with in otitis media. It is of much rarer occurrence than otalgia accompanying otitis. It characterizes itself frequently by its typical course. Often it is associated or caused by caries of a molar tooth on the same side, or by ulceration of the epiglottis, as a reflex action of the vagus.

THERAPEUTIC HINTS.—Compare facial neuralgia, toothache, etc.

Plant. maj., "is our sheet-anchor for otalgia independent of organic lesions." (Houghton.)

Sodium seleniate[30], has just relieved a *pure* otalgia of years standing. (Norton.)

NOSE.

General Observations.

1. Concerning the indications from its form and shape.

A *thick, swollen nose* is either a sign of inflammation (if accompanied by pain, heat and redness) or of rhachitic and scrofulous diseases. Lovers of intoxicating drinks are generally blessed with a suspicious looking nose of such shape.

The nose becomes *pointed, pinched,* during spasms; during a chill, and in collapse.

When in *children* the nose becomes *suddenly pointed,* it is a sign of impending spasms; an *habitually* pointed nose denotes derangement in the mesenteric glands, and general atrophy.

If the nose becomes pointed suddenly *during the act of parturition,* it is a sign of *internal hæmorrhage,* or *complete exhaustion,* or *threatening convulsions.*

The pointed nose of a nursing mother indicates her complete unfitness for being wet-nurse. When it sets in *suddenly in severe illness,* it is always a bad symptom; being a sign of extreme exhaustion and collapse. *A heavy motion of the nasal wings* during respiration is a sign of impeded respiration, either from asthma, pneumonia, croup, dropsy in the chest, or incipient paralysis of the respiratory muscles, and utter prostration.

2. In regard to color.

A red nose may result from a variety of causes: extreme cold air, congestions, crying, being overheated, cold in the head, worms, scrofula, intemperate use of ardent spirits. *In young girls* it denotes the setting in of menstruation.

Circumscribed redness of the point of the nose, of the cheeks, and of the forehead, with paleness and coldness of the other parts of the face, denote, in pneumonia, that suppuration has taken place.

A coppery shining redness of the root of the nose is a sign of existing syphilitic ulcers within the nose.

The copper nose of wine and liquor drinkers is well known.

A pale nose is found in various morbid affections; during a chill, during syncope, in spasms from nausea, after great exertions, from sexual excesses, profuse hæmorrhages, and so on. *In women* it is a sign of approaching menses or disturbed menstruation; profuse leucorrhœa; chlorosis. *During pregnancy* it is a sign that the fœtus is dead. *In eruptive fevers* it denotes a disturbance in the exanthematic process and probably metastasis to internal organs.

A grayish, lead-colored nose is found in dropsy of the chest and pericardium, in induration of the lungs and some malignant typhoid fevers.

Single lead-colored stripes have been observed in obstinate obstruction of the portal vein.

A bluish color of the nose is found in some cases of apoplexy; in croup, in catarrhus suffocativus, in diseases of the lungs, heart and larger blood-vessels; in short, in all morbid conditions which cause a stagnation of blood, cyanosis.

Brownish, yellowish spots on and over the nose, like a saddle, indicate mostly a diseased liver or chronic leucorrhœa.

A blackish fur at the nostrils is found in typhus, epidemic dysentery, cholera, altogether in conditions of great prostration.

3. In regard to temperature.

A hot nose we find in violent coryza, inflammation, before bleeding, during delirium, sopor, apoplexy.

Coldness of the nose we find during a chill, spasms, nausea; from loss of blood, exhaustion, and in consequence of inflammation of the bowels.

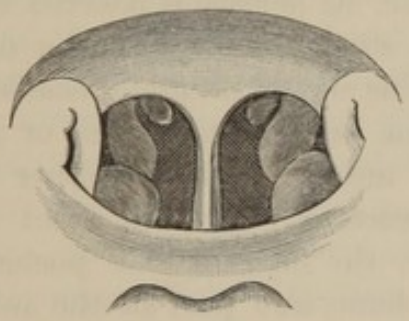
An habitually cold nose is found in disordered states of the abdominal viscera, in dropsical complaints and in chlorosis.

To all this I have to add one more pathognomonic sign:

The constant picking and boring at the nose, which is found frequently in consequence of irritation in the intestinal canal from worms, or in typhoid fevers and cerebral affections. In these latter cases there is always a want of natural secretion in the nose; it is as *dry* as a powder-horn; its getting *moist* again is one of the most favorable signs in such cases.

Examination of the Cavity of the Nose.

In order to get a full view of the **Anterior nasal cavity**, it is necessary to dilate the nostrils. This is best done by means of Fraenkel's or Von Troeltsch's speculum narium, instruments which after being introduced into the nose can be made to expand so as to push off the side walls of the nose from the septum. If we now place the patient in a position where the direct rays of the sun fall into the dilated nostrils, or in the absence of sun-light, concentrate by a reflector the rays of candlelight or diffused daylight into the nasal cavity, we will be able to see the entire anterior part of it, from the superior turbinated bone to the floor; the anterior portion of the middle turbinated bone; the anterior and inferior surface of the inferior turbinated bone; the surface of the septum, and in many cases the posterior wall of the pharynx through the inferior meatus. The turbinated



bones appear in a normal state as pale, red protuberances, covered with mucus. Any alteration from the normal color, any swelling or hypertrophy, or change in configuration, the amount of secretion, the presence of ulceration, etc., will thus be admitted to our view.

In order to get a view of the **Naso-pharyngeal cavity** and the **Posterior portion of the nasal cavity**, we must inspect these parts through the pharynx. For this purpose we need a tongue spatula, a reflector and a pharyngeal mirror which, in some cases, may be substituted by an ordinary laryngoscopic mirror. The tongue may be held down with the spatula by the patient himself, if he be intelligent enough, after the physician has depressed it in a manner that it cannot obstruct our view and still remain behind the lower incisor teeth. Free passage being thus provided the physician "introduces the mirror into the pharynx by passing it as closely as possible over the lower teeth and along the back of the tongue in the median line, until it is in

the free space between the base of the tongue, the laryngeal opening, the posterior wall of the pharynx, and the velum palatinum. It should not stand directly in the median line, on account of the uvula, which would lie in front of it and obstruct the view, but rather on the right or the left side, under one or the other of the arches of the soft palate, with its upper edge brought close to the posterior wall of the pharynx. The problem to be solved in introducing and placing the mirror is, not to touch the patient."—(Fraenkel.) This requires practice, and it is not an easy matter to handle the instrument in such a manner as to receive clear pictures from the parts above and behind the velum palati. The illumination is best achieved by a reflector fixed upon the forehead of the examiner, as mentioned under the examination of the ear. If successful in our operations, we will see posteriorly in the rhinoscopic picture the *fornix pharyngis* or vault of the pharynx, which is attached to the base of the skull; its surface is covered with ridges, running irregularly, and its structure consists of a dense adenoid tissue, on which account this region is called *tonsilla pharyngea*. Laterally we will see the *recessus pharyngei*, or the fossa of Rosenmüller, from which anteriorly rise on either side the *pharyngeal openings of the Eustachian tubes*. In front and above we see the posterior nares, the septum, the posterior portion of the middle turbinated bone, and part of the middle meatus of the nose. With the exception of the septum, the mucous membrane, covering the walls of this region, has a fresh red color; the turbinated bones, usually covered with more or less mucus, appear as steel-gray or yellowish-red protuberances. The erectile bodies found on the posterior portion of the turbinated bones frequently lead to sudden swellings. Further down we see the posterior surface of the velum, on the sides of which run downward and inward two folds of mucous membrane.

Catarrh, Coryza, Cold in the Head.

Catarrhal inflammation of the mucous membrane, lining the nasal cavity, is characterized by redness and swelling of this membrane, and a discharge from it, which at first is watery and lastly becomes muco-purulent, therefore the name **Catarrh**, meaning a *flowing down*, namely of impurities from the head according to the Ancients' idea of this trouble. It is usually preceded by a

feeling of lassitude and chilliness, and a sensation of weight and pressure in the head, which latter symptom gives rise to the name of **Gravedo** or **Coryza**, while **Cold in the head** expresses its principal cause. The hyperæmic state of the mucous membrane is at first attended with prickling and dryness of the nose and a frequent disposition to sneeze; then follows the discharge, at first, as mentioned above, watery and by-and-by muco-purulent. If mild, the morbid process may end with this. But often it spreads from the mucous membrane to the epidermis, inflaming the nose wings and upper lip, or may even provoke erysipelatous inflammation of the face; or it spreads upwards into the frontal sinuses; or through the lachrymal duct to the lachrymal sac and the conjunctiva; or sideways into the Highmorian cavities; or backwards into the retro-nasal cavity, where it not unfrequently affects the Eustachian tubes, causing ringing in the ears, difficulty of hearing, etc.; or it extends downwards into the larynx, trachea and bronchial tubes producing cough, or diarrhœa when it affects the mucous lining of the intestines. Nasal catarrh is often attended with neuralgia of the fifth pair of nerves.

Coryza occurs *sporadically* and *in the form of an epidemic*. There is no doubt that some persons show a decided *predisposition* to it. **Taking cold** by means of sudden changes in the temperature, or exposure to sudden cooling of the surface after being heated, is one of the principal causes of this affection, but also *irritants* of various description, vapors of iodine or acrid gases, or the pollen of plants, compare "hay fever," are fruitful sources of this complaint; we find it also associated with the initial stage of measles, while typhoid fever and scarlatina exclude it. The epidemic form seems to have its cause in peculiar (unknown) states of the atmosphere—deficiency or superabundance of ozone?

"The question of the *contagiousness* of coryza must, in spite of the negative result of inoculation, be considered as one and the same with the question of the contagiousness of catarrhal or purulent secretions in general, and in the light of clinical observations must, for the present, be answered in the affirmative, especially as regards purulent secretions." (Fraenkel).

The *duration* of a simple catarrh is usually from two to three days. Complicated cases last much longer. An acute attack if neglected, or if dependent on some dyscrasia, may run into the chronic form.

The **Purulent nasal catarrh**, or **Nasal blenorrhœa**, characterized by

its purulent secretion, we find often in new-born children, as the consequence of infection by the leucorrhœal discharge of the mother; it may be caused also by the action of gonorrhœal matter; it develops itself during the course of scarlet fever or variola, in diphtheria and in consequence of cauterizations of the mucous membrane. It is a much graver form than simple catarrh and may also lead to chronic catarrh.

THERAPEUTIC HINTS.—**Acon.**, in the commencement, dry state; from cold winds. Headache, sneezing; running of the nose; watering of the eyes; roaring in the ears; flushed face; thirst; scanty, hot urine; dry, short cough with crying; accelerated pulse and breathing; hot, dry skin; sleeplessness or dozing with starting.

Amm. carb., stoppage, especially at night; acrid, watery, burning discharge; congestion of blood to tip of nose when stooping.

Amm. mur., coryza with stoppage; great soreness and tenderness of nose; loss of smell.

Anac., fluent; frequent sneezing; sense of smell acute, or illusory like pigeon dung or burning tinder.

Aral. rac., coryza with frequent sneezing, soon followed by asthma; excessively sensitive to slightest depression of temperature.

Arsen., burning, excoriating, watery discharge, with a feeling of being stopped up; or stoppage alternating with running of nose and burning. Cold worse in morning with throbbing headache; frequent sneezing; hoarseness; rawness and burning in throat; tickling in throat-pit and dry cough at night. Nosebleed; pale face; great thirst; sleepless and restless; lassitude. Great inclination to catarrhal affections.

Arum triph., discharge of burning, ichorous fluid, excoriating nostrils, upper lip and corners of mouth. Stoppage. Constant boring and picking at nose and lips.

Asar., fluent coryza with deafness and sensation as if the ears were plugged with something.

Bellad., watery and acrid discharge with burning in nose; or dryness of nose with acute or dull smell; frequent sneezing which painfully shakes the head; erysipelatous redness and swelling of the nose with chilliness and heat in the face; intense redness of face; severe throbbing headache; dull pain in frontal sinuses; hallucinations or delirium with injection of conjunctiva,

photophobia and lachrymation. Great dryness in fauces; difficulty of swallowing; soft palate inflamed and glistening; tonsils swollen. Children either cry continually and nothing seems to please them, or they are drowsy, apathetic and desire nothing; grown persons are either very sensitive to slightest noise, excited, or stupefied. Worse afternoon and evening.

Bryon., extending into frontal sinuses or chest; stitch-pain.

Calc. carb., sudden colds with dropping of clear water from the nose in spells; mouth dry, fauces rough; heat and dulness of head; frequent and profuse urination; great liability to catarrhs in scrofulous children; stoppage of nose.

Camphora, fluent coryza with chillness at the commencement; thin, sallow, nervous, sensitive people with cold hands and feet.

Cepa, profuse watery discharge with sneezing, excoriating nose and lip; itching, burning and stinging in eyes; flow of tears; headache. Worse in evening and warm room; better in open air. Laryngeal cough with pain as if the larynx would be torn. North-easterly storms.

Chamom., chilly, feverish; thirsty; one cheek red, the other pale; rattling cough.

Cyclam., sneezing and profuse discharge; loss of smell and taste; pain in head and ears.

Eupat. perf., hoarseness; cough worse in the evening; aching in all the bones.

Euphras., profuse discharge of mild mucus; upper lip stiff as if of wood; eyes inflamed and full of acrid tears; cough only through the day.

Gelsem., summer colds with violent sneezing in the morning; edges of nostrils red and sore; pharyngeal inflammation with pain on swallowing, shooting up into the ear; deafness. Hands and feet cold in P.M.; then drowsy; fever until morning; half waking and talking in sleep during night. Disposition to catch cold at any change in the weather.

Hepar, nose swollen and red, sensitive to touch; blowing the nose causes whizzing and snapping in the ear, and a raw feeling inside of nose; feverish and sensitive to cold air; wants to be covered, even when hot. When fluent coryza suddenly stops and is followed by hoarseness and croupy cough. Disposition to taking cold after the abuse of mercury.

Hydrast., posterior nares clogged with mucus; obstruction of nasal passages; frontal headache.

Iodium, glassy mucus; watery discharge at night, with sneezing; stoppage worse in evening; loss of smell. Eustachian tubes affected with dulness of hearing and noises in the ears.

Kali bichr., a sense of tight pressure at the root of the nose, and dull, heavy headache in forehead, better from pressing tightly the bridge of the nose; discharge is acrid, excoriating nose and lip. Worse in warm, better in cool temperature.

Kali hydr., inflammation of Schneiderian membrane, extending to frontal sinuses, Highmorian cavities, lachrymal ducts and fauces. Nose red and swollen; discharge watery, acrid, continually, with violent and painful sneezing. Eyelids swollen, conjunctiva injected; lachrymation. Sticky pain in ears. Red face, with anxiety and restlessness; hammering pain in forehead with a sensation as if the head were compressed from both sides, or enlarged three times its size. Frantic excitation; fever, with great thirst, hot, dry skin, alternating with drenching sweat; heat preponderates with intermitting shuddering, and dark, hot urine.

Laches., profuse discharge of a thin, watery slime; soreness of nostrils and lip; preceded often for a few days by a feeling of soreness, rawness and scraping in the throat. Violent headache in forehead, when the discharge suddenly dries up.

Lycop., inflammation of frontal sinuses with tearing headache, worse evenings; nightly stoppage, with breathing through the mouth.

Merc. sol., sneezing and dropping of watery fluid from the nose, which is swollen, red and sore. Inflammation of eyes, frontal and Highmorian cavities, of larynx, trachea and bronchi, of tonsils and fauces. Profuse sweat at night, not relieving. Rheumatic pains, worse in the night; in warmth and in cold. Epidemic form or common colds.

Nux vom., ordinary colds at the commencement; when dry or fluent only through the day and stopped up at night; tingling in nose, scraping in throat; heat in head and pain in forehead; hot and feverish and chilly on moving. Smell as of old cheese, sulphur or tinder; constipation. Colds of new-born children.

Phosphor., frequent alternation of fluent and dry coryza; obstruction often in the morning; or discharge from one and stoppage of the other nostril; sneezing causes pain in throat or head and constriction of chest. Fauces feel raw and burning and appear dry and glistening. Hoarseness and bronchial catarrh. Smell and taste gone.

Phytol., flow of mucus from one nostril, while the other is stopped; total obstruction of nose when riding.

Pulsat., at the commencement, when dry and fluent alternately, or stopped up in the evening, with loss of smell and taste and appetite; thirstlessness; chilliness; or later with profuse, thick, yellow or greenish discharge, nosebleed. Conjunctiva inflamed; pressure at root of nose; tearing in Highmorian cavity extending to ear. Dry cough at night when lying down, better on sitting up; stomach ache; slimy, painful diarrhœa. All symptoms are worse in the evening and in a warm room; better in open air.

Rhus tox., thick, yellowish discharge; eczema on both sides below nose; nose swollen and now and then bleeding. Aching in all the bones, worse in rest.

Sanguin., pain over root of nose; eyes sore to touch; sore throat; cough, and finally diarrhœa.

Sepia, profuse and mild discharge, coming on suddenly, combined with rheumatic pains in the limbs and intense occipital headache.

Spigel, copious discharge, badly tasting and smelling; flows during night from posterior nares down into the throat, and causes choking.

The snuffles of infants require:

Amm. carb., when the child in the act of going to sleep starts up again on account of not getting any breath.

Chamom., Nux vom., Pulsat.

If of a syphilitic nature, compare Chronic Catarrh.

Chronic Catarrh, Ozæna.

An acute attack may in consequence of bad management or neglect become chronic, especially its purulent form, or when there is a scrofulous or syphilitic dyscrasia in the person. At first "the mucous membrane becomes thickened and livid," later it seems to shrink, "becomes thin and pale, apparently consisting of connective tissue and blood-vessels alone, and hardly worthy the name of mucous." "The epithelial cells are partly destroyed or they become turbid, and the mucous membrane, losing its natural lustre, appears opaque and uneven."

The secretion is generally of a purulent character, profuse or scanty. Often it forms *crusts*, which adhere firmly to the membrane underneath; their color is frequently of a greenish cast, or

they are mixed with blood. And when the secretion undergoes a specific decomposition, a peculiar, penetrating *stench* is produced, which is communicated to the expired air. From this symptom the complaint has been called **Ozæna**, or Stinknose. Mostly ozæna grows on a dyscratic soil, although cases occasionally occur without either syphilis or scrofula being present.

Chronic catarrh is prone to frequent acute exacerbations. It may assume a suppurative character, destroy the periosteum and cause caries; or it may lead to polypoid excrescences. It may spread to the frontal and Highmorian cavities, or to the skin surrounding the nostrils, causing excoriations of upper lip and infiltration of the cervical glands. It usually is attended with loss of smell, either partial or total, and its annoying and intractible character is well known to both patient and physician.

THERAPEUTIC HINTS.—Agar., profuse fetid discharge; accumulation of mucus in nose, with sensation as if the nose were entirely filled with it; bad smell from mouth.

Alum., soreness and scabs in the nose; thick, yellow mucus.

Ant. crud., on inhaling cold air, it feels as if it went over a raw, very sensitive surface. Nostrils crusty, and corners of mouth cracked and sore.

Arg. nitr., discharge of pus with clots of blood. Chilliness, lachrymation and stupefying headache. Violent itching of nose.

Asaf., greenish, offensive discharge. Mercurial complication.

Aurum, nose inflamed; nasal bones sore to touch; caries of nasal bones; fetid discharge; nostrils ulcerated and agglutinated; whole nose painful, worse at night. Mercurial and syphilitic complication.

Aur. mur., small, painful sores inside of nose; blowing out of blood; mucus from head to throat; headache; constipation; hæmorrhoids.

Baryt. carb., scabs form in posterior nares and behind the uvula.

Berber., extending to antrum Highmorianum, especially left side.

Calc. carb., purulent discharge fetid, thick, yellow-reddish, making lip sore; slimy discharge through the day, with sensation of stoppage; stoppage and dryness at night; stoppage worse in morning on getting awake. Nose swollen, especially at root; soreness on edges and septum, also ulceration; upper lip swollen. Smell dull, or like rotten eggs, dung, or gunpowder. Hoarseness

in morning; rough voice which improves from hawking. Scrofula.

Corall., discharge resembling molten tallow. Profuse secretion of mucus through the posterior nares, obliging to hawk frequently.

Cuprum, affection of frontal sinuses, with pain in forehead, worse over left eye and root of nose, worse from motion, better when lying. Nose feels stuffed and yet sometimes discharges yellow and again watery matter. Smell gone; taste imperfect.

Curare, fetid lumps of pus; scanty menses; pain in os uteri; slight, watery, starchy leucorrhœa.

Elaps., partial stoppage and stuffiness high up in the nostrils, with dull-aching to forehead; worse in wet weather, occasionally bad smell from the nose; offensive discharge; posterior wall of throat covered with a dry, greenish-yellow scab, wrinkled and fissured, extending up to nose; occasional nosebleed; pain from root of nose to ears on swallowing; sneezing at night; sense of smell gone; profuse and dark catamenia.

Graphit., stoppage with secretion of tough, fetid slime; stoppage with periodical attacks of fluent coryza of short duration; hard masses of slime, or crusts in nose; purulent, fetid discharge worse during the menses; bloody discharge; smell as from an old cold in nose, or as of burnt hair; ulcerative nostrils; moist eruption behind the ears; eruptions around anus and genitals. Great inclination to take cold.

Hepar, nose extremely sensitive to touch; swollen and red; the nostrils feel raw after the discharge of mucus; the interior of the nose is sensitive to air.

Iodum, fetid discharge; nose swollen and painful. Scrofula.

Kali bichr., constant snuffing in warm, damp weather; discharge of crusts slightly tinged with blood; perforating ulcers on septum; ulceration of mucous membrane; ulceration of frontal sinuses with violent pain in that region, if discharge stops. Fetid smell from nose; loss of the sense of smell.

Kali carb., obstruction worse in the room, better in open air; yellow-green or bloody discharge; or purulent and fetid from one nostril; crusts closing the nostrils; collection of mucus in throat and feeling of a lump in the throat; convulsive and tickling cough at night with choking and gagging, especially in the morning; rheumatic and gouty symptoms.

Kali hydr., syphilitic origin after abuse of mercury with pain in shin bones, especially at night.

Lycop., stoppage at night, breathing with open mouth; "discharge of elastic plugs;" catarrhal headache and despondency.

Merc. prot., "dark redness of the fauces; elongation of the palate, with collection of mucus behind; enlargement of the tonsils, which are sometimes covered with yellowish or whitish patches, small in size; *collection of tough, yellow mucus in the posterior nares which partially drops into the throat, causing constant inclination to hawk and spit* in order to clear the throat and nose." (Fisher.)

Natr. carb., profuse discharge of thin, white mucus; or thick, yellow-greenish, musty smelling mucus, ceasing after a meal, or at night; stoppage of nose at night. Worse from exposure to slightest draught, or when removing an article of clothing. Loss of smell and taste.

Natr. mur., stoppage high up in nose, with sudden dribbling at times of clear water from nose; posterior nares feel dry in the morning, with scraping in larynx and rough voice. Continual lachrymation from obstruction of the nasal duct; roaring and buzzing in the ears and head with inability to work, read, or think. Loss of smell and taste.

Nitr. ac., often mucous discharge only from posterior nares; red, scurvy tip and nostrils, feels like splinter on touching it; fetor. Mercurial poisoning.

Petrol., obstruction of posterior nares; copious collection of slime in the fauces with a feeling of dryness. Eustachian tubes obstructed, with whizzing, roaring and cracking in the ears; hardness of hearing. Bad smell from mouth.

Phosphor., discharge yellow, or yellow-green, or bloody; nose swollen and sore to touch; nostrils ulcerated. In scarlatina, with swelling of neck and staring eyes, icy cold and bluish hands; discharge flows down into the throat on lying.

Psorin., great fetor; bad smell of all secretions and excretions. Intractible cases where other remedies have failed.

Pulsat., thick, yellow or green and fetid discharge; nose swollen and itching in the evening; wings ulcerated; oozing of watery fluid from nose; loss of smell and taste. Young girls with menses too late, scanty and pale, followed by leucorrhœa; chilliness, intermingled with heat. Timid, whining mood; disposed to internal vexation and grievance; mild, yielding disposition; slow, phlegmatic temperament.

Sepia, greenish crusts with bloody borders; eczema behind the ears; symptoms of portal congestion.

Silic., secretion tough, slimy, purulent; stoppage in the morning followed by hawking of thick, green-yellow, fetid masses after getting up. Acrid water from nose making it sore and bloody; septum sore, and smarting crusts high up in nostrils; frontal sinuses inflamed with pounding and throbbing pain in forehead; fauces dry and painful; uvula swollen; Eustachian tubes itching; chronic inflammation of tonsils and swelling of submaxillary glands.

Sulphur, slimy, acrid discharge with burning in eyes and upper lip; or dryness of nose like parchment and a feeling of stiffness of the nose followed by discharge of thick, bloody slime and then again dryness with sneezing. Inclination to draw the phlegm down through posterior nares. On blowing the nose the ears feel obstructed, or it feels as if air were entering the ears. Soreness inside of nose and of septum. The interior of nose is sensitive to the inhalation of air in a warm room; not in open air.

Besides compare therapeutic hints under acute catarrh.

Influenza, Grippe.

It is an epidemic disease characterized by a series of catarrhal manifestations, attacking the respiratory, and generally also the digestive organs, and is attended by great and rapidly developed weakness, pains in the limbs, severe headache, serious nervous symptoms and more or less fever. It attacks all persons without distinction of age, sex or occupation; atmospheric conditions and local circumstances, such as elevation, condition of soil, etc., are not known of exercising any particular influence upon its spread; in short, exciting causes are not known. The assumption of its contagiousness has been abandoned just as often as it has been established. It spreads rapidly in its local diffusion, advances comparatively slowly on a grand scale over countries and seas without being essentially influenced by human intercourse or the direction of the wind; in other cases it remains limited to narrow circuits, while at still other times it appears simultaneously at different points of the earth's surface or attacks districts far removed from one another with inexplicable leaps.

Its DIAGNOSTIC difference from a common epidemic catarrh lies in its marked march of progression and its independence of weather and season, while from a commencing typhoid fever it differs by its persistent elevation of temperature and the absence

of enlargement of the spleen and rose spots, the moderately frequent pulse, etc. It is not a very fatal disease; but as it modifies and complicates all other existing diseases, it is especially hard on the weak and also on the aged; a tuberculous disposition is often ripened by it into full bloom, and chronic bronchial catarrhs are not unfrequent sequelæ of its visitation.

THERAPEUTIC HINTS.—An epidemic is usually manageable by one or a few remedies, but different epidemics require different remedies, as the genius of their combination is an ever changing one. To detect the specifics for a prevalent grippe, a comparison of the hints given above under catarrh may be of help; the following are additional hints.

Acon., dry cough and stitches in chest.

Arsen., cough and all symptoms worse after midnight; great thirst, great restlessness and great debility.

Bellad., cerebral symptoms; drowsiness; starting in sleep; delirium when shutting the eyes; wants to sleep and cannot sleep. Severe headache; dryness in mouth and throat; spasmodic cough.

Bryon., pain in all the limbs, worse from motion; cough, with pain in pit of stomach, around the short ribs and in chest; affection of liver.

Eupat. perf., severe backache, or bone-pains, with bilious symptoms.

Gelsem., feels "played out," feverishness, catarrhal running from nose, collection of mucus in throat; pain in throat up to ear when swallowing; cough.

Laches., feels worse after sleep; fever worse in the afternoon; sweat without relief.

Mercur., rheumatic pains not relieved by sweat; flabby tongue, with imprints of teeth; diarrhœa; boiling heat from pit of stomach over the entire body.

Nux vom., fever-heat with chilliness by slightest motion; dull, heavy headache; vertigo; hard cough; sour taste; nausea and vomiting; belching; pain in chest; constipation.

Phosphor., bronchial affection with dry cough, tightness of chest, worse before midnight; great debility.

Pulsat., evening aggravation; loss of appetite; bitter taste; diarrhœa; chilliness.

Rhus tox., great aching in all the limbs, worse in rest; great restlessness; red tip of tongue; typhoid symptoms.

Sabad., lachrymation in open air, when looking at a bright light, when coughing or yawning. Sleepy in daytime; chilliness, with heat of face; cough on lying down.

Sanguin., smell in nose like roasted onion; wheezing-whistling cough and finally diarrhœa, which relieves the cough.

Tart. emet., shaking, loose cough, with oppressed breathing, which is relieved by expectorating; gastric symptoms.

Yearly Cold, Rose Cold, Hay Fever, Hay Asthma.

It is a slight febrile catarrh, which affects the conjunctiva, the mucous membrane of the nose and upper air-passages, and frequently, but not always, is attended by asthmatic difficulties, which sometimes are of great intensity. It attacks only people peculiarly disposed to it, and regularly recurs every year when the roses bloom (rose cold), or when hay is made (hay fever, hay asthma), during the months of May till September (summer catarrh). In regard to its EXCITING CAUSES we glean from Blackley's careful experiments the following: A thorough observation of atmospheric conditions showed that the attacks do not run at all parallel with extremes of light and heat. Ozone, benzoic acid, and cumarin produced only a very unimportant influence upon the respiratory organs and none which resembled the symptoms of hay fever. Dust, which, besides, is differently constituted in different regions, may occasion cough and catarrhal symptoms at various seasons; but these have little similarity to hay fever, and are not at all confined to the summer season. The fragrance of flowers of various kinds has little effect, although the smell of chamomilla matricaria produces disagreeable symptoms, headache, etc. The effect of spores of penicillium glaucum was hoarseness, increasing to aphonia, bronchial catarrh, etc., which lasted for some days. On the other hand there has been complete success in developing the features of hay fever by the operation of *pollen* upon the organs of respiration, and it is therefore a certainty that the exciting cause of hay fever must be ascribed to the pollen, fresh or dried, of different plants, especially grasses floating in the air. For this reason the attacks are milder indoors than in the open air, and may be prevented altogether by removing to regions which are free from this exciting cause.

THERAPEUTIC HINTS.—Hay fever being the result of irritation

of the Schneiderian membrane by the pollen of different plants, especially of grasses, it can be mitigated by a sojourn at the sea-side, especially an island or a narrow peninsula, where the air is least pregnated by such pollen. A sea-voyage prevents it altogether. High mountain air is also nearly free of these exciting causes, as are the centres of large cities, where the patient feels best on keeping in-doors. A number of remedies have been tried and some found beneficial. They are: **Ailanth., Arsen., Arum triph., Camphor, Cyclam., Euphorb., Euphras., Gelsem., Glanderin, Grindelia, Hydr. ac., Ipec., Iodum, Kali bichr., Kali hydr., Laches., Lobel., Merc. corr., Merc. sol., Moschus, Natr. carb., Natr. mur., Phosphor., Pulsat., Sabad., Silic., Sticta pulm., Tart. emet., Tax. bacc., Zincum.** Their special applicability must be studied from the hints under nasal catarrh and asthma.

Naja trip., hay fever after sneezing stage and asthmatic trouble remaining. In asthma when all other medicines had failed to touch, and had been well nigh abandoned. (M. Preston.)

Arum mac.[30], in water, "until the throat troubles are better."

Euphorb. off.[30], "when the eyes get lachrymose." (Th. Meurer.)

Epistaxis, Nosebleed.

This affection is a mere symptom of the most different conditions of the organism. We observe it in consequence of congestive as well as in consequence of anæmic and chlorotic conditions. It may sometimes bring relief to headache and congestive states; and it may be an unfavorable sign in adynamic and contagious diseases, as small-pox and measles, when they assume a typhoid character. In diseases of the heart, lungs and spleen, it is never a good sign. In old age it is a sign of threatening apoplexy.

Its most frequent Exciting Causes are, mechanical injuries; a fall or blow upon the nose; straining when coughing; and suppression or irregularity in menstrual discharges, or a suppression of an habitual hæmorrhoidal flow.

The blood itself varies greatly in character. It may be *bright red* or *dark*—almost black; it may easily *coagulate*, and it may be quite *thin* and never coagulate.

Generally, one nostril only bleeds; seldom both. The blood discharges either through the nostrils in front, or backwards, through the posterior nares, into the fauces, thence into the stomach or the larynx. This last phenomenon requires a little

attention, so as not to confound it with vomiting of blood, or bloody expectoration from the lungs.

THERAPEUTIC HINTS.—In general, *bright blood*, Acon., Arnica, Bellad., Bryon., Dulcam., Hyosc., Millefol., Rhus tox., Sabad.

Dark blood, Crocus, Nux vom.

Clotted blood, Chamom., Mercur., Rhus tox., Platin.

Acon., in arterial congestive bleeding; palpitation of the heart; children.

Agar., in old people with relaxed state of the circulatory system.

Amm. carb., in the morning, when washing.

Argent., with tickling and crawling sensation of the nose.

Arnica, after external injury; always worse from washing the face or blowing the nose.

Arsen., after a fit of passion or vomiting; great heat and restlessness.

Bellad., congestion to the head; answers questions as if frightened; pupils dilated; vertigo on stooping. Worse from motion, noises and bright light; sparks before the eyes; noise in the ears; fainting; chronic cases.

Bryon., in the morning after rising; after being overheated; vicarious menstruation.

Carb. veg., profuse and long-continuing; paleness of face; small, intermitting pulse; in convalescents from fever; excited by emotion, jarring; short and hot breath; numbness; tenderness in region of liver; jaundice. Also daily at 9 o'clock A.M.

China, anæmic state; singing, ringing in the ears; great paleness of face and fainting.

Conium, suppressed menstruation by taking cold; frequent ebullitions of blood; jerking sensation about the heart.

Crocus, black, viscid blood, with cold sweat on forehead; yellowish face; fainting.

Eriger., congestion of the head; febrile action; red face.

Ferrum, in anæmic children with frequent changing of color in the face. Hæmorrhophilia.

Hammam., in combination with hæmoptysis.

Indigo, with dry cough.

Kali carb., when washing the face, every morning at 9 o'clock.

Melilot. is said to stop nosebleed immediately.

Merc. sol., blood coagulates in the nose, and hangs down like icicles.

Moschus, with all the signs of depletion; spasmodic jerking of the muscles.

Nux vom., congestion to the head; pain in forehead; constipation; suppressed hæmorrhoidal flow.

Pulsat., vicarious menstruation; catarrhal affections; anæmic children.

Rhus tox., at night; during stool; from bending forward, and any bodily exertion.

Secale, anæmic state, either from exhaustive diseases or artificial depletion; the blood is thin and does not coagulate. Aged persons.

Thlaspi bursa pastoris is recommended by Bönninghausen as one of the most efficient remedies, but without special indications.

Trill. pend., passive hæmorrhage.

Ver. alb., deadly paleness of face, getting red when rising; coldness of body; slow, intermitting pulse.

Sometimes nosebleed may be immediately stopped by compressing the facial artery, on the side of bleeding, against the superior maxilla near the angle of the nose.

Polypi in the Nose

Are mostly of the mucous variety. They have been cured by **Calc. carb.**, **Calc. jod.**, **Kali nitr.**, 3d trit., **Phosphor.**, **Pulsat.**, **Sanguin.** and **Teucrium.**

Inflammation of the Nose.

It attacks the deeper layers of the mucous membrane and the periosteum, and is usually circumscribed. The mucous membrane is highly inflamed, and the external skin œdematously swollen. The nose is very painful and at times when the inflammation extends higher up, brain symptoms appear with more or less fever. It may be caused by external injuries, may be associated with catarrh or blenorrhœa, or appear without any demonstrable cause.

THERAPEUTIC HINTS.—It is usually quickly relieved by **Bellad.**; **Hepar** or **Silic.** may in some cases be required.

FACE.

The face of a patient tells a long story, and it will be well for the student to closely observe its features, expression, color and temperature. The experienced physician reads out of it not only the degree of severity of an attack, but often also its whole general nature. But that must be learned by practice. There are shades so fine that they could not be well described, but which nevertheless stamp upon the whole a peculiar character.

1. The aspect of the face.

a. A delicate appearance, with long-fringed eyelashes and brilliant eyes, often serves to point out the tubercular diathesis.

b. The thickened alæ of the nose and upper lip of scrofula are most marked in childhood.

c. The pallor of anæmia is very important; it is waxy in chlorosis and pasty in diseases of the kidneys.

d. A puffy appearance about the eyelids along with anæmia is very generally an indication of albuminuria.

e. A bloated, blotchy face generally indicates irregular habits of living.

f. The features undergo remarkable changes in erysipelas, parotitis, facial paralysis, etc.

g. A sunken face indicates exhaustion, either from too great exertion, or loss of sleep, want of nourishment, or profuse diarrhœa, or disturbed digestion. If it sets in suddenly during pregnancy, it is a premonitory sign of abortus. If you find it in the incipiency of a disease, without previous weakening causes, it denotes a severe illness. If it sets in suddenly, during a disease, without chill or spasm, by which it might be caused, it is a sign of extreme exhaustion, collapse, or metastasis, mortification, or apoplexia nervosa.

h. The hippocratic face is characterized in the following way:

The skin upon the forehead is tense, dry, or covered with cold perspiration; the temporal regions are sunken in; the eyelids are pale, and hang down; eyes are dull, without lustre, turned upwards, and sunken; the alæ nasi are pinched together, and the nose is very pointed; the malar bones stick out, and the cheeks are sunken in and wrinkled; the ears appear to be drawn in, and are cold; the lips are pale, livid; the lower jaw sinks down, and the mouth is open. It is always a sign of extreme prostration of vital power, and is found in cholera, in mortification, and during death struggle.

i. A wrinkled face is natural to old age, but in children it is a sign of imperfect nutrition, and is found in consequence of exhausting diarrhœa and atrophy. In boys and half-grown lads a wrinkled face, without loss of appetite or sleep, is a sign of onanism, or other bad habits. Such a young, old, and wrinkled face is a pitiful sight.

The linea ophthalmia zygomatica is a line or fold, commencing at the inner canthus of the eye, running towards the zygoma where it ends. It shows momentarily, when children cry, but becomes more permanent in children with affections of the brain. Its appearance in simple catarrh is said to indicate the setting in of whooping-cough.

The linea nasalis is a line or fold, which commences *at the upper part of the alæ of the nose, and runs towards the orbicularis oris* (the sphyncter of the mouth), forming a more or less perfect half-circle. This line, if found in children, denotes abdominal diseases, especially inflammation of the bowels, also rachitis, scrofula and atrophy. In grown persons it is said to have been observed as a concomitant symptom of albuminuria, ulcer and cancer of the stomach, and degeneration of the liver.

The linea labialis is a line or fold, which commences at *the corner of the mouth and runs down towards the side of the chin, where it ends,* and whereby the chin appears to be elongated. This line is said to be a characteristic sign in children of inflammatory diseases of the larynx and lungs. Very marked it has been found in grown persons who suffered with ulceration of the larynx and bronchial affections, attended with difficulty in breathing and much mucous discharge.

k. The risus sardonicus, a spasmodic distortion of the face, which resembles a kind of laughing, is found in irritation and inflammation of the brain, in inflammation of the pericardium and

diaphragm, in irritation of the intestinal canal, in abnormal conditions of the menses, even after mental excitement, fright and depression of spirits.

2. The expression of the face is, in health, the reflex of the mind; and in disease it has a distinct reference to the nervous system.

In general, I may say:

a. A rigid, staring, stupid, troubled, but sometimes also a smiling countenance, is found in affections of the brain, and in typhoid conditions.

b. An anxious, sad, and restless expression is found in lung and heart diseases.

c. A morose, long-faced, apathetic expression is found in abdominal disorders.

3. The color of the face.

a. Redness, if habitual, denotes a tendency to gout and hæmorrhoids; and is a sign of indulgence in good-living and alcoholic drinks.

Flying, often-changing redness is seen in children during dentition, in women before menstruation, or after conception, and is also found in inflammation of the lungs.

Bright, vivid redness is found in nervous diseases, hysteria and tendency to hæmorrhages.

Dark, purplish redness is found in congestive, apoplectic and suffocative conditions.

Redness, coming and going in spots, I have often found in brain diseases of little children, and also in pneumonia.

One-sided redness, with paleness and coldness of the other side, in encephalitis, is, according to Schönlein, a sign of the formation of pus in that half of the brain which corresponds to the red side of the face. It is found also in diseases of the lungs, heart and abdomen, and in children during dentition.

The circumscribed hectic flush is characteristic of phthisis.

Redness of the cheeks, with a white ring around the alæ of the nose and the mouth, are frequently met with in different fevers, especially scarlatina, and is a sign of pretty severe illness.

b. Paleness.

Sudden paleness, especially *around the mouth,* is found in children with colicky spasms in the abdomen.

Great paleness, alternating with flushes of redness, is found in inflammation of the lungs and brain; also during dentition.

A pale, peculiar white and wrinkled face is found in children with chronic hydrocephalus.

A sudden paleness, after an inconsiderable limping, in children, combined with great lassitude, is a sign of a lingering hip-disease.

In *women, paleness* is a sign of profuse or suppressed menstruation or chlorosis.

Sudden paleness during pregnancy prognosticates threatening metrorrhagia, or abortion, or the dying of the fœtus.

Sudden paleness about the nose is in scarlet fever a bad sign; it denotes a metastasis to the brain; during the pealing-off period it is a forerunner to dropsy.

Sudden paleness after a fall indicates concussion of the brain.

Pale lips are characteristic of chlorosis.

c. Blue color of the face

Is found in organic diseases of the heart, especially in dilatation of the ventricles and disorganizations of the valves, whereby the oxygenation of the blood is interfered with. In the highest degree it exists in *cyanosis,* a state in which, consequent upon structural faults in the heart, the venous and arterial blood becomes mixed. In new-born children, therefore, if it is lasting, it is a sign of such malformation; if it, however, soon passes off, it may have been caused by hard labor-pains, face-presentation, or by the navel string being wound around the neck of the child.

We meet it likewise in consequence of strangulation or suffocation.

d. Livid, grayish, lead-colored face denotes deep-seated organic diseases, scirrhus, gangrene.

e. Yellowish color of the face is found mostly in diseases of the liver.

The yellowness of jaundice varies from a pale orange to a deep-green yellow. The yellowish color of infants does not always denote jaundice; it is very often merely a discoloration by hæmatin, which remains in the skin until absorbed, and is analogous to the effects of a bruise; there is no yellowishness of the white of the eyes attending it.

There is a certain yellowness of a malignant aspect, which is distinguished from jaundice by the pearly lustre of the eyes. It is associated with a cancerous diathesis.

f. Brown spots in women are mostly signs of pregnancy, or irregularity in menstruation; they are also said to be found in liver complaints.

Irregular brownish spots a little raised above the skin and

covered with small pustules, which sometimes discharge a bloody fluid, are in children a sign of congenital syphilis.

Fat, short, and broad persons, with dark-brown or black hair, dark eyes, yellow-brownish, dark color of the skin, are mostly affected on the right side with liver complaints and so on.

g. Telangiectasias on the face, especially on the upper parts of the cheeks and on the lower eyelids, are almost always connected with some obstruction or stasis; often in the chest, but more frequently in the abdomen, and a diminution of chlorides in the urine.

Telangiectasias, if ever so small, on the right side of the face, denote an obstruction in one of the organs on the right side; and if on the left, a stasis in one of the organs on the left side.

Bright red telangiectasias denote an *arterial*, whilst *purplish-looking* indicate *a venous obstruction*, either in the chest or abdomen of the corresponding side.

Small varices on the left side of the nose, or lips, or glans penis, indicate a venous obstruction in the heart or kidney.

So also are *ringworms* almost always indicative of some kidney affections.

4. The temperature of the face.

a. Heat of the face is found in congestion of the head, in fevers, in inflammatory conditions, in coryza, and in other complaints.

b. Coldness of the face we find in chills, in spasms, exhaustion, in sickness of the stomach, in syncope.

A deadly coldness in cholera; also in violent hysterical paroxysms.

In inflammation of the lungs, coldness of the face denotes the commencement of suppuration.

Sudden coldness of the face in scarlet fever portends death.

Erysipelas of the Face.

Compare Erysipelas of the Scalp. All which is said there is equally applicable here.

Crusta Lactea, Milk Crust.

This is a disease of nursing infants. The eruption usually commences as a patch of slightly raised pimples. The patch

itches, increases in size, and becomes more inflamed in consequence of being constantly rubbed; the cuticle is raised in more or less defined vesicles, which are usually broken by friction; the surface becomes excoriated, somewhat swollen, pouring out an ichorous secretion.

With the increase of irritation, the patch spreads. In case the eruption commences in several patches, they are liable to run into one. Thus the disease increases; the secretion, from being a transparent and colorless ichor, becomes opaque, milky, then yellowish, and at last purulent, while small pustules are developed on the red and tumefied skin around the patch. For this reason it has been called *impetigo*. The forming crusts now grow thicker, and have the appearance of dried honey. Not unfrequently, as a consequence of pressure or friction, blood is mingled with the discharges, and the crusts become colored of various hues, from a lightish-brown to positive black.

Although commencing on and being confined most frequently to the forehead and cheeks of the child, this obstinate disease may attack the whole body, being a source of great suffering to the child and annoyance to the mother.

Should the eruption continue even after the milk teeth are all cut, no new light of prophecy need beam upon the little patient, according to Wilson: "When puberty arrives, then certainly the disease will go." For, although there are cases of pretty tolerable stubbornness, yet I have not seen a case which did not yield to a judicious homœopathic treatment in a reasonable space of time.

THERAPEUTIC HINTS.—**Arsen.**, pimples and vesicles; acrid discharge; itching; burning; worse at night, in cold air; better from external warmth.

Bellad., teething, jerking in sleep; want to sleep yet inability to go to sleep.

Calc. carb., children fair and plump; teething; scrofulous habit; worse about new moon; burning after washing; perspiration after eating or drinking.

Cicuta, thick, yellowish scurf on the chin and upper lip, with oozing; scurf on nose.

Crot. tigl., itching, followed by burning; vesicles run together, ooze and form thick, gray-brown crusts.

Lycop., thick crusts, underneath cracked surface; skin dry; excoriated places; worse at night and in warmth.

Merc. sol., tendency to inflammation of the lymphatic glands; salivation; scorbutic gums.

Rhus tox., acrid, inflamed look; swollen glands on neck and throat; stiffness of the neck.

Sulphur, excoriations, pimples, vesicles; violent itching, worse at night; bleeding from scratching; diarrhœa in the morning.

Compare Eczema Capitis.

Comedo, Acne Punctata and Rosacea.

"**Comedo** is a distended, sebaceous follicle, whose contents, projecting above the surface of the skin, becomes black from dirt, and when pressed out assumes the shape of a worm. When an irritative process is set up around a hair follicle by the retention of the secretion, and assumes a true inflammatory character, we have **Acne punctata.**"

"**Acne rosacea** is a chronic inflammation of the face, made up of acne spots, periglandular inflammation, erythema, and new growth of connective tissue, growing independently of the glands." (Lilienthal, p. 126 and 127).

THERAPEUTIC HINTS.—**Comedo** and **Acne punctata** I have seen disappear after **Bellad.** or **Pulsat.** Compare also Arsen., Carb. veg., Hepar, Kali brom., Kali hydr., Lachnanth., Silic., Sulphur. If in connection with sexual excesses: Calc. carb., Phosph. ac., or Sulphur.

Acne rosacea is much more difficult to manage.

Alum., when the redness is livid and the veins varicose.

Arsen., when there is great burning.

Calc. carb., when there are menstrual disorders and congestion to the head.

Carb. veg., varicose veins on nose.

Laches., bluish redness.

Petrol., more at the commencement, when the vessels are not yet injected.

Sulphur, great itchiness and bluish color of the face.

Besides, compare: Ant. crud., Capsic., Carb. an., Canthar., Caustic., Conium, Dulcam., Ledum, Mezer., Natr. mur., Nitr. ac., Nux vom., Rhus tox., Ruta, Sepia.

Lupus.

Fox, Volkman, and Virchow consider lupus as a neoplasma, consisting of cell-proliferation. This large accumulation of proliferating cells, pressing away and destroying the layers of the cutis, and often also the deeper-lying tissues, is characteristic of lupus. We meet it in different stages: 1., there are only brownish-red spots—**Lupus maculosus**; 2., there are papules or nodules elevated above the skin, also of brownish-red color and in size from that of a pea to a hazel-nut—**Lupus tuberculosus**; 3., there is infiltration; the skin appears of a similar color and is covered with lamellæ of the epidermis—**Lupus exfoliaticus**; 4., there are atonic ulcers, which result from the softening of the infiltrations—**Lupus exulcerans**; 5., there are new formations rising above the skin which frequently involve large portions—**Lupus hypertrophicus**; and 6., there are large ulcers, extending peripherically—**Lupus serpiginosus.** The first four stages are also known under the name of **Lupus nonexedens**, and the latter two **Lupus exedens.** The favorite seat of lupus are the nose and cheeks; from lupus exedens great disfiguration of the face may result.

All authors agree that lupus has nothing to do with syphilis, either acquired or congenital. (Lilienthal, Skin Diseases.)

THERAPEUTIC HINTS.—Aur. mur., when starting from the mucous membrane of nose and spreading to the cartilages, bones and skin.

Graphit., lupus of nose, with deep ulceration.

Lycop., superficial ulceration in pale, sallow patients.

Besides, compare: **Arsen., Baryta carb., Carb. an.** and **veg., Caustic., Cicuta, Hydrocotele Asiatica, Kali bichr., Phosphor., Silic., Staphis., Sulphur, Thuja.**

Ulcus Rodens and Epithelioma.

The **Rodent ulcer** has hard sinuous edges, is of several or perhaps of many years duration, almost painless, and occurs in middle-aged or elderly persons of fair health and without enlarged glands. It attacks by preference the eyelids and the adjacent portions of the ckeek, the nose, or the cheeks. It is as rare on the lower as epithelioma is on the upper lip.

Epithelioma is the common form of so-called cancer of the lip or

tongue (also of vulva, clitoris, penis and rectum). It is essentially an infiltrating disease, beginning, as a rule, as a little wart or tubercle, and then gradually spreading, it may crack, fissure and ulcerate, and when at this stage, we easily recognize its malignant character by the infitration with the cancerous material, and the integument then presents the well-known indurated and everted edges. The base of the ulcer is dirty or greyish, more or less papillated; it may be reddish and discharge a thin fluid, or be disposed to scab over. (Lilienthal's Skin Diseases).

THERAPEUTIC HINTS. — For **Rodent ulcer** compare: Arsen., Bellad., Cicuta, Hepar, Hydrocotyle, Hydrast., Mercur., Nitr. ac., Silic., Staphis., Sulphur, Uran.

For **Epithelioma of lip** compare: Acet. ac., Arg. nitr., Arsen., Ars. jod., Aurum, Bellad., Carb. an., Chelid., Clemat., Conium, Hydrast., Kreosot., Laches., Pulsat., Silic., Sulphur, Thuja.

MOUTH.

1. Its external parts.

The lips we have had to notice on several occasions, as parts of the face.

Their *paleness* denotes poverty of blood; a *transient paleness*, however, is found in chills, spasms, fainting fits and frights.

Their *redness* is a healthy condition; but an *increased, deeper* or *brighter* redness is found in feverish conditions. A higher redness of the lower lip, without apparent fever, indicates **Sulphur.**

Bluish lips are seen in all such conditions, where a free circulation of blood is interfered with.

Dry lips are found in all acute, feverish or inflammatory conditions.

Brownish or even *blackish crusts* form in typhoid states.

Fever-blisters, hydroa, are found on the lips very often in intermittent fevers and pneumonia, scarcely ever, however, in typhus; and lastly, *the cancer of the lip,* a malignant growth, appears mostly at the prolabium, rarely at the adjoining integument of the lip.

The *mouth is kept open* in stoppage of the nose, difficulty of breathing, great interior heat, hardness of hearing. In fevers it is a sign of great exhaustion—the lower jaw falling down, especially during slumber. This symptom very frequently indicates **Lycop.**

The *mouth is spasmodically closed* in lock-jaw and other spasmodic affections.

2. The interior cavity of the mouth.—We shall examine it under the following heads: Gums, teeth, tongue, salivary glands and their ducts, tonsils, uvula, soft palate, fauces and mucous membrane of the mouth and fauces.

The Gums

Present different aspects. They are *pale* in anæmia, from the abuse of iron and mercury, and in spasmodic conditions; *blue* in cyanosis and scurvy; *brown* and *blackish*, coated with tough mucus, in typhoid conditions; *a bluish, grayish, slate-colored stripe or line* on the gums is a sign of lead-poisoning; *a purple line* is found in old age, and *a pink line*, especially on the gums of the lower jaw by paleness of the remaining gums, is often met with in phthisical persons.

Swelling of the gums is either of a *congestive* and *inflammatory* nature—in toothache, parulis—or of an œdematous and *spongy* nature (in scurvy, mercurial affections, noma, stomatitis.) In such conditions the gums generally *bleed* easily when being cleansed, or only slightly touched.

Bleeding gums are said to have been observed also from suppressed menstrual or hæmorrhoidal bleedings—vicarious bleeding.

Ulcerated gums may originate from diseased states of the teeth, from general maladies or from constitutional maladies, such as scurvy, syphilis, mercurial poisoning, noma, stomatitis.

The *special diseases of the gums* are:

Parulis, Gumboil, Inflammatory Swelling of the Gums.

This generally takes its origin in a diseased tooth, but may appear without any known cause. Its seat is almost always on the gums, covering the external side of the alveolar processes, and may reach to such a height as to swell up the cheek and corresponding side of the face, making chewing and talking a very difficult operation. It almost always ends in the formation of an abscess, which breaks and discharges.

THERAPEUTIC HINTS.—Hepar, Mercur., Silicea.

Epulis, a kind of Fungoid Growth on the Gums.

This originates either in the gums, periosteum, or on the maxillary bone. When it begins in the gums or periosteum, there is a reddish or bluish-red, hard and painless swelling of a roundish or oval shape, growing out of the alveolar process or between the teeth. It is somewhat movable if it rests upon a broad pedicle;

generally, however, it has none, and shows no distinct boundaries. In its further progress it assumes the form of an irregular, fleshy lump, which, growing larger, overlaps one or more teeth; the adjoining teeth are pressed out of their position, and grow crooked or fall out. The swelling soon bursts through the mucous membrane, by which it has been covered, and presents a tuberous, grayish-red mass, which is either an entire mass or is split into different, irregular lobes by deep crevices. It bleeds easily, and, by sloughing, pieces of it fall off, forming cavities, which secrete a most offensive ichorous discharge.

When it starts from the maxillary bone, we observe at first a swelling of the bone, then the teeth fall out, and at last the morbid growth bursts forth.

In some cases it has its seat in the antrum Highmorianum.

THERAPEUTIC HINTS.—Calc. carb., Chamom., Natr. mur., Thuja.

Fistula of the Teeth.

In consequence of inflammation of the periosteum lining the root of the teeth, and its consequent suppuration, or caries of the root and alveolar processes, a channel is gradually formed, which opens either on the inside of the mouth or outside of the face, where it discharges a morbid secretion, and forms hard, callous edges on its outlet. This is called a **Fistula dentalis.**

THERAPEUTIC HINTS.—Compare Askalabotes, Calc. carb., **Caustic.**, Ratan., **Silic.**, Sulphur.

The Teeth.

The ossification of the dental sacs of the twenty *milk-teeth* takes place in the fifth month of pregnancy. Their eruption, as a general rule, not however without many exceptions, takes place in the following groups:

1. The lower two incisors between the fourth and seventh months, followed by a pause of from three to nine weeks;

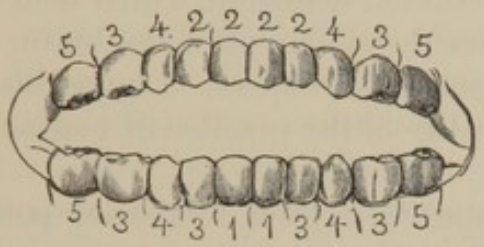
2. The four upper incisors—at first the two central, then the two lateral—between the eighth and tenth months, followed by a pause of from six to twelve weeks;

3. The first two molars of the upper, then the lower incisors, and lastly the molars of the lower jaw, between the twelfth and

fifteenth months, followed by a pause until the eighteenth month;

4. The canine teeth (eyes and stomach teeth) between the eighteenth and twenty-fourth months, followed by a pause of from two to three months;

5. The four second molars between the twentieth and thirtieth months.



This period of first dentition is often attended with serious ailments of the child. We find it complicated frequently with ulcers on tip of tongue or other portions of the mouth; with abnormally increased secretion of the fluids of the mouth, slobbering; with conjunctival blenorrhœa, especially during the eruption of the eye-teeth and upper molars; with catarrhal affections of the alimentary canal—diarrhœa and vomiting, and of the respiratory organs—catarrh on the chest; with cutaneous eruptions, such as: urticaria, pomphi, lichen, prurigo, eczema, and impetigo (crusta lactea); with disorders of the nervous system—spasms and eclampsia; and with fever, a general elevation of the body temperature. How is this? Can such a comparatively small irritation, as of necessity must be combined with the teeth piercing through the gums, cause all such mischief? Or is it not rather one of those common mistakes, where a thing is supposed to be the cause of another thing, because it is found simultaneously with the same? May not it and the other have both a still deeper, yet common cause? And this cause is *the development of the brain, which at that time is greater and more rapid than at any other period of life*, lasting to the seventh year of life. The soft tissue of the brain grows denser, and the distinction between its *cortical* and *medullary*, or *gray and white substance*, becomes more marked, whilst the yellowish substance, which had formed a line of demarcation between them, gradually fades away. The brain of infants is, compared with the remaining body, very voluminous; being in the proportion of 1 : 8, whilst in adults it is in the proportion of 1 : 40 or 50. And still it grows on rapidly up

to the seventh year, so that the brain of an infant, which weighs at its birth, say three-quarters of a pound, weighs in its second year nearly one pound and a half, until up to the seventh year it attains a weight of two pounds and a half and more. (Burdach.) It is clear, that such great and marked changes in the central organ may naturally be attended by a liability to disturbances in its own sphere and other peripheric organs, and this is the reason why the period of dentition, which is in itself only the result of this interior development of the brain, is attended by so manifold and serious disturbances. I hope this will be sufficient to prove the absurdity of the practice of *lancing the gums* during infancy.

The teeth become *loose* from mercurial poisoning, in scurvy and syphilitic affections.

The *decay* of the teeth is ascribed to microscopic parasites, and to a want of silicea in the system.

A decay near the gums of the teeth is a sign of sycosis.

Odontalgia, Toothache.

Toothache has many causes: decay of the teeth and exposure of the nerve; various affections of different organs of the body; taking cold, etc. The best treatise on this painful affection, the curing of which has won many a friend to Homœopathy, is that of Dr. Hering in his Domestic Physician. With the kind permission of its author, I shall insert it here with some additions:

Most in the Front-teeth.—Bellad., Caustic., Carb. veg., Chamom., China, Coffea, Ignat., Mercur., *Natr. mur.*, *Nux mosch.*, *Nux vom.*, Phosphor., Phosph. ac., *Rhus*, Silic., Staphis., *Sulphur.*

Most in the Eye and Stomach-teeth.—Acon., Calcar., Hyosc., *Rhus*, Staphis.

Most in the Molars or Back-teeth.—Arnica, Bellad., *Bryon.*, Calcar., *Carb. veg.*, Caustic., Chamom., China, Coffea, Hyosc., Ignat., Mercur., Nux mosch., Nux vom., *Phosphor.*, Phosph. ac., Pulsat., Rhus, Silic., *Staphis.*, Sulphur.

Most in the Upper-teeth.—*Bellad.*, Bryon., *Calcar.*, *Carb. veg.*, *China*, *Natr. mur.*, *Phosphor.*

Most in the Lower-teeth.—*Arnica*, *Bellad.*, Bryon., Carb. veg., *Caustic.*, *Chamom.*, China, Hyosc., Ignat., Mercur., Nux vom., Phosphor., Pulsat., *Rhus*, *Silic.*, *Staphis.*

One-sided.—Acon., Bellad., Chamom., Mercur., Nux vom., Pulsat.

On the Left side.—Acon., Ap. vir., Arnica, Carb. veg., Caustic., *Chamom.*, China, Hyosc., Mercur., *Nux mosch.*, *Phosphor.*, Rhus, Silic., *Sulphur.*

On the Right side.—*Bellad.*, Bryon., Calcar., Coffea, Laches., Natr. mur., Nux vom., Phosph. ac., Staphis.

A whole Row of Teeth.—Chamom., Mercur., Rhus, Staphis.

In Hollow Teeth.—*Ant. crud.*, *Bellad.*, Bryon., *Calcar.*, Carb. veg., Caustic., *Chamom.*, China, Coffea, Hepar, *Hyosc.*, *Laches.*, *Mercur.*, Nux mosch., Nux vom., Phosphor., Phosph. ac., *Pulsat.*, *Rhus*, Silic., *Staphis.*, Sulphur.

In the Gums.—Ant. crud., Arnica, *Bellad.*, Bryon., *Calcar.*, *Carb. veg.*, Chamom., China, Hepar, Hyosc., Laches., *Mercur.*, *Natr. mur.*, Nux mosch., *Nux vom.*, Phosphor., Phosph. ac., Pulsat., Rhus, Silic., *Staphis.*, Sulphur.

——— **Upper.**—Bellad., *Calcar.*, Natr. mur.

——— **Lower.**—Caustic., Phosphor., *Staphis.*, Sulphur.

——— **Interior of.**—Arnica, Natr. mur., Phosph. ac., Pulsat., Rhus, *Staphis.*

——— **Swollen.**—Acon., Bellad., Calcar., Chamom., Carb. veg., Caustic., China, Hepar, Laches., Nux vom., Natr. mur., Phosphor., Pulsat., Rhus, Sulphur.

——— **Painful.**—Ap. vir., Arsen., Calcar., Carb. veg., Caustic., Laches., Mercur., Nux mosch., Nux vom., Phosphor., Staphis., Sulphur.

——— **Bleeding.**—Bellad., Calcar., Carb. veg., Caustic., Laches., Mercur., Nux mosch., Nux vom., Phosphor., Staphis., Sulphur.

——— **Ulcerated.**—Bellad., Calcar., Carb. veg., Caustic., Hepar, Laches., Mercur., Natr. mur., Nux vom., Phosphor., Staphis., Silic.

Pressing.—Acon., *Arnica*, Bryon., Carb. veg., Caustic., China, Hyosc., Ignat., Natr. mur., Nux mosch., Nux vom., Phosphor., *Rhus*, Silic., *Staphis.*, Sulphur.

——— **Inwards.**—Rhus, Staphis.

——— **Outward.**—Phosphor.

——— **Asunder.**—Phosph. ac.

——— **As if from Congestion of the Blood, as if the teeth were too close.**—Acon., Arnica, Bellad., Chamom., Calcar., China, *Coffea*, Hepar, Hyosc., *Nux vom.*, *Pulsat.*

As if pulled out or wrenched.—Arnica, Caustic., Nux mosch., Nux vom., Phosph. ac., Rhus.

Too Long.—Arnica, Arsen., Bellad., *Bryon.*, Calcar., Carb. veg., *Caustic.*, Chamom., Laches., Hyosc., Natr. mur., Nux vom., Rhus, Silic., *Sulphur.*

Loose.—Arnica, Arsen., Bryon., Carb. veg., Caustic., Chamom., China, Hepar, *Hyosc.*, Ignat., Mercur., Natr. mur., Nux mosch., Nux vom., Phosphor., Pulsat., Rhus, Staphis., Sulphur.

As if too Loose.—Arsen., Bryon., *Hyosc.*, Mercur., Rhus.

Blunt.—Acon., China, Dulcam., Ignat., Laches., Natr. mur., Mercur., *Nux mosch.*, Phosphor., Phosph. ac., *Pulsat.*, Silic., Staphis., Sulphur.

Sore, Bruised.—Arnica, Arsen., Bellad., Bryon., Calcar., Carb. veg., Caustic., *Ignat.*, Natr. mur., Nux vom., Phosphor., *Pulsat.*, *Rhus.*

Burning.—Chamom., Mercur., Natr. mur., Nux vom., Phosphor., Pulsat., Rhus, Silic., Sulphur.

Gnawing, Scraping.—Chamom., Nux vom., Rhus, Staphis.

Digging.—Ant. crud., Bryon., Calcar., China, Ignat.

Boring.—Bellad., Calcar., Laches., Mercur., Natr. mur., *Nux vom.*, Phosphor., Phosph. ac., *Silic.*, *Sulphur.*

Jerking, Twitching.—Ap. vir., Ant. crud., Arsen., Bryon., Bellad., Calcar., Caustic., Cepa, Chamom., Coffea, Hepar, Hyosc., Laches., *Mercur.*, *Nux vom.*, *Pulsat.*, *Rhus*, *Sulphur.*

Drawing, Tearing.—Ant. crud., Bellad., Bryon., Carb. veg., Calcar., Cepa, Chamom., China, Glonoin., Hyosc., Laches., Mercur., Nux vom., Phosph. ac., Rhus, Staphis.

Cutting, Piercing.—Acon., Ant. crud., Bellad., *Bryon.*, Calcar., Caustic., *Chamom.*, *China*, Laches., *Mercur.*, Nux vom., Nux mosch., Phosphor., Phosph. ac., *Pulsat.*, Rhus, Silic., Staphis.

Beating, Pulsating.—*Acon.*, Arnica, Arsen., *Bellad.*, Calcar., Caustic., Chamom., China, Coffea, Glonoin., *Hyosc.*, Laches., Mercur., Natr. mur., Phosphor., Pulsat., Rhus, *Staphis.*, Sulphur.

Intermittent.—Bellad., Bryon., Chamom., Coffea, Calcar., China, Mercur., Nux vom., Pulsat., Rhus, Silic., Staphis., Sulphur.

Constant, day and night.—Bellad., Calcar., Caustic., Natr. mur., Silic., Sulphur.

During the day only, better in the night.—Mercur.

————————, none in the night.—Bellad., Calcar., Mercur., Nux vom.

During the day only, worse in bed.—Ant. crud., Mercur.

Worse in the night.—Acon., Ant. crud., Arsen., *Bellad.*, Bryon., *Carb. veg.*, *Chamom.*, China, Coffea, Hepar, Hyosc., Mercur., Natr. mur., Nux mosch., Nux vom., Phosphor., Phosph. ac., *Pulsat.*, *Rhus*, Silic., *Staphis.*, *Sulphur.*

By night only, not during the day.—Phosphor.

Most before midnight.—Bryon., *Chamom.*, China, Natr. mur., Rhus, Sulphur.

——— after ———.—Arsen., Bellad., Bryon., Carb. veg., Chamom., China, *Mercur.*, Natr. mur., Pulsat., Phosphor., Rhus, *Staphis.*, Sulphur.

When awaking.—Bellad., Carb. veg., Laches., Nux vom. (See Sleep.)

In the morning.—Arsen., Bellad., Bryon., Caustic., Carb. veg., China, *Hyosc.*, Ignat., Natr. mur., *Nux vom.*, Phosphor., Phosph. ac., Pulsat., *Rhus*, *Staphis.*, Sulphur.

At noon.—Coccul., Rhus.

After noon.—Calcar., Caustic., Mercur., *Nux vom.*, Phosphor., *Pulsat.*, Sulphur.

Towards evening.—Pulsat.

At night.—Ant. crud., *Bellad.*, Bryon., Calcar., Caustic., Hepar, *Hyosc.*, Ignat., *Mercur.*, Nux mosch., Nux vom., *Phosphor.*, *Pulsat.*, *Rhus*, Staphis., *Sulphur.*

Every other day.—China, Natr. mur.

Every seventh day.—Arsen., Phosphor., Sulphur.

In Spring.—Acon., Bellad., Bryon., Calcar., Carb. veg., Dulcam., Laches., Natr. mur., Nux vom., *Pulsat.*, Rhus, Silic., Sulphur.

In Summer.—Ant. crud., Bellad., Bryon., Calcar., Carb. veg., Chamom., Laches., Natr. mur., Nux vom., Pulsat.

In Autumn.—Bryon., China, Mercur., Nux vom., Nux mosch., Rhus.

In Winter.—Acon., Arsen., Bellad., Bryon., Calcar., Carb. veg., Caustic., Chamom., Dulcam., Hepar, Hyosc., Ignat., Mercur., Nux mosch., *Nux vom.*, Phosphor., Phosph. ac., Pulsat., *Rhus*, Silic., Sulphur.

Caused by Damp night-air.—Nux mosch.

——— Damp-air.—Mercur.

——— Cold damp weather.—Nux mosch., Cepa, Rhus, Natr. sulph.

——— Wind.—Acon., Pulsat., Rhus, Silic.

——— Draught.—Bellad., Calcar., *China*, Sulphur.

Taking cold.—Acon., *Bellad.*, *Bryon.*, Calcar., Caustic., Chamom., China, Coffea, *Dulcam.*, Ignat., *Hyosc.*, *Mercur.*, *Nux vom.*, *Nux mosch.*, *Phosphor.*, *Pulsat.*, *Rhus*, Staphis., Sulphur.

———, **when overheated.**—Glonoin., Rhus.

———, **by getting wet.**—Bellad., Calcar., Caustic., Hepar, Laches., Nux mosch., Phosphor., Pulsat., Rhus, Sulphur.

Suppressed Perspiration.—Chamom., Rhus.

Getting worse from Cold Air.—Bellad., Calcar., Hyosc., Mercur., Nux mosch., Nux vom., Sabad., Silic., Staphis., Sulphur.

——— **in the mouth.**—Acon., *Bellad.*, Bryon., Calcar., Caustic., Hyosc., *Mercur.*, Nux mosch., Nux vom., Phosphor., Pulsat., Silic., Staphis., Sulphur.

——— **Opening of the mouth.**—Bryon., Chamom., Caustic., Hepar, Nux vom., Phosphor., Pulsat.

——— **Breathing.**—Pulsat.

——— **Drawing Air into the Mouth.**—*Ant. crud.*, Bellad., Bryon., Calcar., Caustic., Hepar, Mercur., Natr. mur., Nux mosch., Phosphor., Silic., Staphis., Sulphur.

——— **Cold washing.**—Ant. crud., Bryon., *Calcar.*, Chamom., *Mercur.*, *Nux mosch.*, Nux vom., Pulsat., Rhus, Silic., Staphis., Sulphur.

——— **Eating cold things.**—Bryon., Calcar., Chamom., Nux vom., Pulsat., Rhus, Sabad., Staphis., Sulphur.

——— **Drinking cold things.**—Bryon., Calcar., Chamom., Caustic., Hepar, Laches., Mercur., Natr. mur., Nux mosch., *Nux vom.*, Pulsat., Sabad., Silic., Staphis., Sulphur.

——— **Rinsing of the Mouth with Cold Water.**—Sulphur.

——— **Cold in general.**—*Arsen.*, Ant. crud., Calcar., Carb. veg., Mercur., Natr. mur., Nux mosch., Nux vom., *Pulsat.*, Phosphor., *Rhus*, Silic., Staphis., Sulphur.

In the Open Air.—*Bellad.*, Calcar., Caustic., *Chamom.*, *China*, Hyosc, Mercur., *Nux mosch.*, *Nux vom.*, *Phosphor.*, Pulsat., *Rhus*, *Staphis.*, Sulphur.

———, **Staying.**—Bellad., Bryon., Chamom., Hyosc., Mercur., Nux vom., Phosphor., Staphis., Sulphur.

———, **Walking.**—Nux vom., Phosphor., *Staphis.*

In a Room.—Ap. vir., Ant. crud., *Chamom.*, Hepar, Nux vom., *Pulsat.*, Sulphur.

——— **after coming out of the open air.**—Phosphor.

In a warm Room.—Bryon., Cepa, Chamom., Hepar, Nux vom., *Pulsat.*, Phosphor.

Warm Stove.—Arsen., Pulsat.

External warmth.—Bryon., Chamom., Hepar, Mercur., Nux mosch., Nux vom., Phosphor., Phosph. ac., Pulsat., Rhus, Staphis., Sulphur.

Something warm.—Bryon., *Calcar.*, Carb. veg., Chamom., Coffea, Laches., Mercur., Natr. mur., Nux vom., Phosph. ac., *Pulsat.*, Silic., Sulphur.

Eating warm things.—Bryon., Calcar., Chamom., Nux vom., Phosphor., Pulsat., Silic.

Something hot.—Bellad., *Calcar.*, Phosph. ac.

Drinking warm things.—*Bryon.*, Chamom., Laches., Mercur., Nux mosch., Nux vom., Pulsat., Rhus, Silic.

Warm Bed.—Bellad., Bryon., Chamom., Mercur., Nux vom., Phosphor., Phosph. ac., *Pulsat.*, Rhus.

Getting warm in bed.—*Chamom.*, Mercur., Phosph. ac., Phosphor., Pulsat.

Drinking.—Chamom., Calcar., Caustic., *Laches.*, Mercur., Pulsat., Rhus, Silic.

——— **Cold or warm.**—Laches., Natr. sulph.

——— **Water.**—Bryon., Calcar., Carb. veg., Chamom., Mercur., Nux vom., Pulsat., Silic., Staphis., Sulphur.

——— **Wine.**—Acon., Ignat. [Nux vom. *after wine*].

——— **Malt liquors.**—Nux vom., Rhus.

——— **Coffee.**—Bellad., Carb. veg., Chamom., Coccul., Ignat., Mercur., Natr. sulph., Nux vom., Pulsat., Rhus.

——— **Tea.**—China, Coffea, Ignat., Laches.

Smoking tobacco.—Bryon., Chamom., China, *Ignat.*, Mercur., Nux vom.

Salty things.—Carb. veg.

Eating.—Ant. crud., Arnica, Bellad., Bryon., Calcar., *Carb. veg.*, *Caustic.*, *Chamom.*, Coccul., Hepar, Hyosc., Laches., *Mercur.*, Nux mosch., Nux vom., *Phosphor.*, Phosph. ac., *Pulsat.*, Rhus, Silic., *Staphis.*, Sulphur.

Only while eating.—Coccul.

After eating.—Ant. crud., *Bellad.*, *Bryon.*, Calcar., Chamom., China, Coffea, *Ignat.*, Laches., *Mercur.*, *Natr. mur.*, *Nux vom.*, Rhus, *Staphis.*, *Sulphur.*

Chewing.—Arnica, Arsen., Bellad., Bryon., Carb. veg., Caustic., *China*, Coccul., Coffea, *Hyosc.*, *Ignat.*, *Mercur.*, *Natr. mur.*, *Nux vom.*, Phosphor., *Phosph. ac.*, *Pulsat.*, Silic., Staphis., Sulphur.

Only while chewing.—China.
Swallowing.—Staphis.
Biting.—Arsen., Bellad., Bryon., Calcar., Carb. veg., Caustic., China, Coffea, *Hepar*, Hyosc., Laches., *Mercur.*, Nux vom., Phosphor., Phosph. ac., Pulsat., *Rhus*, Silic., Staphis., Sulphur.
——— something soft.—Veratr.
——— soft food.—Coccul.
——— hard food.—Mercur.
Touched by the food.—Bellad., Ignat., Nux vom., Phosphor., Staphis.
Picking.—Pulsat.
Cleaning.—Carb. veg., Laches., Phosph. ac. *Staphis.*
Touching.—Ant. crud., Arnica, Arsen., *Bellad.*, *Bryon.*, Calcar., *Carb. veg.*, Caustic., *China*, Coffea, *Hepar.*, Ignat., *Mercur.*, Natr. mur., Nux mosch., *Nux vom.*, Phosphor., *Pulsat.*, *Rhus*, *Staphis.*, *Sulphur.*
——— with the tongue.—Carb. veg., China, Ignat., Mercur., Phosphor., Rhus.
——— even very softly.—*Bellad.*, Ignat., Nux vom., Staphis.
Pressing on the teeth.—Caustic., China, Hyosc., Natr. mur., Staphis., Sulphur.
Sucking the gums.—Bellad., Carb. veg., Nux mosch., Nux vom., Silic.
Rising.—Ignat., Mercur., Platin.
Moving the body.—Arnica, *Bellad.*, *Bryon.*, China, *Mercur.*, Nux vom., Phosphor., Staphis.
——— the mouth.—Caustic., Chamom., Mercur., Nux vom.
Talking.—Nux mosch.
Deep breathing.—Nux vom.
Being at rest.—Arsen., Bryon., Chamom., Pulsat., Rhus, Staphis., Sulphur.
Sitting.—Ant. crud., Mercur., *Pulsat.*, *Rhus.*
——— too much.—Acon.
While lying down.—*Arsen.*, Bellad., Bryon., *Chamom.*, Hyosc., Ignat., Mercur., Nux vom., Phosphor., *Pulsat.*, *Rhus*, Staphis., Sulphur.
——— on the painful side.—Arsen., Nux vom.
——— on the painless side.—Bryon., Chamom., Ignat., Pulsat.
——— in bed.—Bryon., Chamom., Nux vom., Pulsat.
In bed.—*Ant. crud.*, Bellad., Bryon., *Chamom.*, *Mercur.*, Nux vom., Phosphor., *Pulsat.*

Sleep with yawning.—Staphis.
When going to sleep.—Ant. crud., Arsen., Mercur., Sulphur.
While asleep.—Mercur.
When awaking.—Bellad., Bryon., Calcar., Carb. veg., Laches., Nux vom., *Phosphor.*, Silic., *Sulphur.*
Mental emotions.—Acon.
Vexation.—Acon., Chamom., Rhus, Staphis.
Passion.—Nux vom.
Mental exertions.—Bellad., Ignat., Nux vom.
Reading.—Ignat., Nux vom.
Noise.—Calcar.
Being talked to by others.—Arsen. Bryon.
For women.—Acon., Ap. vir., Bellad., Calcar., Chamom., China, Coffea, Hyosc., Ignat., Nux mosch., Pulsat.
Menstruation, before.—Arsen.
——— **during.**—Calcar., *Chamom.*, Carb. veg., Natr. mur., Laches., Phosphor.
——— **after.**—Bryon., Calcar., Chamom., Phosphor.
During pregnancy.—Ap. vir., Bellad., Bryon., Calcar., Hyosc., Mercur., Nux mosch., Nux vom., Pulsat., Rhus, Staphis.
While nursing.—Acon., Arsen., Bellad., Calcar., China, Dulcam., Mercur., Nux vom., Phosphor., Staphis., Sulphur.
For children.—Acon., *Ant. crud.*, Bellad., Calcar., Chamom., Coffea, Ignat., Mercur., Nux mosch., Pulsat., Silic.
For irritable, nervous persons.—Acon., Bellad., Chamom., Coffea, China, Hyosc., Nux mosch.
For persons who have taken much mercury.—Carb. veg., Bellad., Hepar, Laches., Staphis.
——— **who drink much coffee.**—Bellad., Carb. veg., Chamom., Coccul., Mercur., Nux vom., Pulsat., Silic.
Getting better from:—
Cold air.—Nux vom., Pulsat.
Wind.—Calcar.
Uncovering.—*Pulsat.*
Drawing air into the mouth.—Nux vom., *Pulsat.*
Cold washing.—Bellad., Bryon., Chamom., Pulsat.
External cold.—Bellad., Bryon., Chamom., China, Mercur., Nux vom., Phosphor., *Pulsat.*, Staphis., Sulphur.
Cold hand.—Rhus.
Finger wet with cold water.—Chamom.
Holding cold water in the mouth.—Bryon., Cepa, Coffea, Clemat., Natr. sulph.

Cold drinking.—Bellad., Bryon., Chamom., Mercur., Nux vom., Phosphor., Pulsat., Rhus, Sulphur.
In the open air.—Ant. crud., Bryon., Cepa, Hepar, Nux vom., *Pulsat.*
In the room.—Nux vom., Phosphor., Sulphur.
External warmth.—Arsen., Bellad., Calcar., Chamom., China, Hyosc., Laches., Mercur., Nux mosch., Nux vom., Pulsat., *Rhus*, *Staphis.*, Sulphur.
Wrapping up the head.—Nux vom., Phosphor., Silic.
Eating something warm.—Arsen., Bryon., Nux mosch., Nux vom., Rhus, Sulphur.
Drinking ———.—Nux mosch., Nux vom., Pulsat., Rhus., Sulphur.
Getting warm in bed.—Bryon., Nux vom.
Drinking.—Bellad.
Smoking tobacco.—Mercur.
When eating.—Bellad., Bryon., Chamom., Phosph. ac., Silic.
After ———.—Arnica, Calcar., Chamom., Phosph. ac., Rhus, Silic.
When chewing.—Bryon., China, Coffea.
Biting.—Arsen., Bryon., China, Coffea.
Picking the teeth, so that they bleed.—Bellad.
Picking the teeth.—Phosphor. ac.
Rubbing ———.—Mercur., Phosphor.
Touching the teeth.—Bryon., Nux vom.
Sucking the gums.—Caustic.
Pressing upon the teeth.—Bellad., China, Bryon., Ignat., Natr. mur., Pulsat., Phosphor., Rhus.
Moving.—*Pulsat.*, *Rhus.*
When walking.—Pulsat., Rhus.
When at rest.—Bryon., Nux vom., Staphis.
Sitting up in bed.—Arsen., Mercur., Rhus.
Getting up.—Phosphor., Nux vom.
When lying down.—*Bryon.*, Mercur., *Nux vom.*
——— on the painful side.—*Bryon.*, Ignat., Pulsat.
——— painless ———.—Nux vom.
——— lying down in bed.—Mercur., Pulsat.
In bed.—Sulphur.
When going to sleep.—Mercur.
After sleep.—Nux vom., Pulsat.
The pains extend
to the jawbones and face.—Laches., Mercur., Nux vom., Hyosc., Rhus, Sulphur.

The pains extend

to the cheeks.—Chamom., Caustic., Bryon., Mercur., Silic., Staphis., Sulphur.

into the ears.—Arsen., Bryon., Calcar., Chamom., Hepar, Laches., Mercur., Staphis., Sulphur.

into the eyes.—Caustic, Chamom., Mercur., Pulsat., Staphis., Sulphur.

into the head.—Ant. crud., Arsen., Chamom., Hyosc., Mercur., Nux vom., Rhus., Staphis., Sulphur.

With headache.—Ap. vir., Glonoin., Laches.

——— **rush of blood to the head.**—Acon., Calcar., China, Hyosc., Laches., Pulsat.

——— **swollen veins** of the forehead and hands.—China.

——— **heat in the head.**—Acon., Hyosc., Pulsat.,

——— **burning of the eyes.**—Bellad.

——— **flushed cheeks.**—Acon., Arnica, Bellad., Chamom., Mercur., Nux mosch., Nux vom., Phosphor, Pulsat., Rhus tox., Sulphur.

——— **pale face.**—Acon., Arsen., Ignat., Pulsat., Staphis., Sulphur.

——— **swelling of the cheek.**—Arnica, Arsen., Bellad., Bryon., *Chamom.*, Laches., *Mercur.*, Natr. mur., Nux vom., Pulsat., Phosphor., Phosph. ac., Staphis., Sulphur.

——— **salivation.**—Bellad., Dulcam., Mercur.

——— **dry mouth and thirst.**—China.

——— ——— **without thirst.**—Pulsat.

——— **dry throat and thirst.**—Bellad.

——— **chilliness.**—Pulsat., Rhus.

——— **heat.**—Hyosc., Rhus.

——— **warm perspiration.**—Hyosc.

——— **chilliness, heat, thirst.**—Laches.

——— **diarrhœa.**—Chamom., Coffea, Dulcam., Rhus.

——— **constipation.**—Bryon., Mercur., Nux vom., Staphis.

1. **Arnica** after the extraction of a tooth; it will stop the bleeding and accelerate the healing of the gums. After the insertion of artificial teeth, it relieves the pain in the swelling; after filing out carious teeth—which is sometimes a very useful operation—mix a few globules of it in a teaspoonful of water, and put some of it on the parts which have been filed. In very intense pain, occurring after a tooth has been drawn, sometimes **Hyosc.** is of use. *Arnica* is sometimes good for throbbing toothache, with

a sensation as if the tooth were being forced out from its socket by the blood; hard swelling of the cheeks.

2. **Coffea** will remove the severest pains, which drive the patients almost frantic; they cry, tremble, and do not know what to do; the pain is indescribable; it is momentarily relieved by holding cold water in the mouth. For stinging, jerking pain, or intermitting aching and pain when chewing, it is to be preferred to all other remedies.

3. **Acon.** must be given in all those cases where the patients are almost frantic with pain, which is indescribable, and which **Coffea** has failed to relieve; also for throbbing pains, occasioned by taking cold, with determination of blood to the head; burning in the face; it is particularly suitable for children; when it is no longer efficacious, give **Chamom.** or **Bellad.**

4. **Glonoin.** for toothache from taking cold, after having been overheated, if the beating of the pulse is felt in all the teeth, or a drawing in all the teeth; pain extending to whole right side of face, having waves of spontaneous exacerbation, without being influenced by anything specially.

5. **Chamom.**, particularly in children—and in persons who are frequently vexed, and who drink much coffee—also in females before menstruation; pain in hollow teeth, after taking cold when in perspiration, or when the patient is very irritable and inclined to cry; when the pain is insupportable, and aggravated periodically, worse during the night; when no particular tooth can be pointed out as the painful one; or when the tooth is hollow and loose, and feels as if too long; or when the pain extends through the whole set, and every tooth feels too long; also when it extends through the jaws into the ear, and through the temples into the eyes; when there is crawling continually, or scraping sensation in the nerve of the hollow tooth, after which the pain increases; drawing and tearing, or boring and throbbing pain; when at its height, the pain is stinging and jerking, and extends to the ear; the patient cannot bear the warmth of the bed, and the pain generally commences soon after meals, particularly after eating or drinking anything warm; when it grows much worse after drinking cold water—also after coffee; cannot be relieved by anything but dipping a finger into cold water and applying it to the tooth; when, while the pain lasts, the cheek is red and hot, or the cheek and gums are swollen and of a light red color; when the glands under the chin are painful and swol-

len, accompanied with great weakness, particularly in the joints; with pain in the articulation of the jaw on opening the mouth, extending to the teeth.

6. **Nux mosch.** suits children, women—particularly during pregnancy—and all people with a cool, dry skin, who never perspire; for pains from taking cold in damp, cold weather, or from the night-air; for pains which get worse if air, particularly cold, damp air, is drawn into the mouth; if warm water or warm applications ease the pain; for toothache which is increased by the shaking of the body in going up or down stairs, if the pain commences on the right side and goes to the left; for pains as if a tooth were wrenched out; worse from much talking; the teeth become easily blunt. Frequent yawning, sleepiness and swooning; profuse menstruation.

7. **Nux vom.** for toothache in persons of a hasty temper, with ruddy complexion, who love coffee and ardent spirits—have little out-door exercise, or who have taken cold; when a healthy tooth is painful and feels loose, or the teeth seem too long, with jerking, shooting pains in the lower jaw; a drawing pain extending into the temple, or a pain from a hollow tooth, affecting the whole face and even the bones, or extending over the whole side; or for drawing and burning pains in the nerves of a tooth, as if it were wrenched out, accompanied by violent stitches, which affect the whole body, particularly on inspiration; when a dull pain in the bones changes to a tearing pain, which passes through the teeth and jaws, or where there is a boring, gnawing, tearing pain on one side; sometimes jerking or rheumatic pains, attended with a pricking sensation; when they chiefly commence in bed or in the evening, preventing chewing, grow worse or return as soon as the mouth is opened in the cold air; or when reading or thinking; or when the tearing pains become worse from drinking anything cold and better from external warmth; in general the pains are worse after eating and exercise; when along with the tearing pains the glands beneath the lower jaw are painful, and particularly when a swelling appears on the gums, which seems about to burst.

8. **Pulsat.** for persons of a mild, quiet, timid disposition, or for women and children of a fretful temper; when the pain is only on one side; for toothache which is prevalent in the spring, accompanied by earache and headache, confined chiefly to one side; when there is a stinging pain in the decayed tooth, accom-

panied by great sensitiveness of the left side of the face, extending to the ear, with heat in the head and chills over the whole body; but particularly when there is a gnawing pain in the gums, and pricking as of pins, with tearing and jerking in the tooth itself, as if the nerve were stretched and then suddenly relaxed; or for jerking or tearing in the tooth as if it would start from the jaw, and aggravated by cold water, the heat of the bed, a warm room, or by taking anything warm into the mouth; cold air relieves it—*the toothache always ceases entirely in the open air, but returns in the warm room and gets worse;* worse when sitting, better when walking about—worse from picking the teeth, better from pressure—chewing does not make it worse; it comes on mostly towards evening, rarely before, and is accompanied by chilliness and pale face, or with congestion of blood to the head; or with heat without thirst; especially for toothache caused by drinking chamomile tea.

9. Ignat. in cases where the foregoing remedies appear to be indicated, but are insufficient, and the patient is of a more tender and sensitive disposition, sometimes cheerful, at other times inclined to tears; particularly for persons who grieve much; when the jaw-teeth feel as if crushed; when there is a boring pain in the front teeth, and a soreness in all the teeth; worse after drinking coffee, after smoking, after dinner, in the evening, after lying down, and in the morning on awaking.

10. Hyosc. in very sensitive, nervous, excitable persons; the pain almost drives the patient mad—it is a tearing or throbbing, extending to the cheeks and along the lower jaw; or there is a tearing, raging pain in the gums, with a buzzing sensation in the tooth, which is loose, and feels, when chewing, as if it were coming out; or jerking, throbbing, drawing, tearing, which extends to the forehead; violent tearing pains in different teeth, as if the blood were pressed into them, occasionally accompanied by flushes of heat, with determination of blood to the head; it is aggravated by cold air; generally comes on in the morning, and is sometimes accompanied by jerking in the fingers and arms, especially in persons who are subject to convulsions.

11. Bellad. is frequently best adapted to females or children, particularly when the pain and anguish cause great restlessness, running about, or where there is depression, and a disposition to cry; when the teeth and gums are painfully sensitive; when biting produces a feeling as if there were ulcers at the roots, with

stinging, cutting, jerking, tearing pain; and more especially for a drawing pain, which is worse after going to bed, and during the night; or for pricking pains in a hollow tooth, day and night; or a pain in a hollow jaw-tooth, as if too much blood were forced into it, with heat in the gums and throbbing in the cheeks—nothing mitigates the pain but picking the gum until it bleeds; or the gums are swelled, with burning and stinging pains, discharge of much saliva, the cheek swelled, sometimes the eyes hot and the throat dry, with great thirst—frequently the pain returns in the morning on awaking, or recommences some time after dinner; the teeth ache when exposed to the open air, when touched, from biting, when food or hot liquids come in contact with them—pressing hard upon the cheeks sometimes gives relief.

12. **China**, for mothers who are nursing—or persons who, otherwise cheerful, become cross and irritable; the teeth are covered with dark sordes; the pain comes on periodically, and is throbbing, tearing, jerking or drawing, with great pressure, as if the blood were forced into the teeth, or boring and numbness about the teeth—worse on motion or when touched, and returning on exposure to a draught—the gums swell, the mouth is dry, there is thirst, the blood rises to the head, veins of the forehead and hands swell, and the sleep during the night is uneasy, although the pain is not so great.

13. **Mercur.**, for children; in general when there are tearing pains in several teeth at once, in hollow ones and those adjoining them—the pain affects the whole side of the face, or drawing and stinging pains extend to the ear; it is particularly troublesome during the night; or for excruciating jumping pains in the teeth, especially at night, with stitches extending to the ear and the head, which drive the patient out of bed; also for stinging pains in a decayed tooth, worse after eating or drinking anything cold or warm; the pain is generally increased by cold, and particularly by damp air, is less severe when in a warm place, or when the cheek is rubbed—sometimes the air, when rushing in, causes pain in the front teeth; or the toothache is only felt during the day and ceases during the night, and is followed by perspiration, and in the morning the same pains return again, in paroxysms, with longer or shorter intervals, alternating with giddiness or tearing in the limbs; the teeth are almost always loosened, the gums swell or become white and ulcerated, are detached from the

teeth, burn and ache when touched; or they begin to itch, to bleed and to suppurate, with tearing through the roots of the teeth, or with painful swelling of the cheeks.

14. **Hepar**, after **Mercur.** or **Bellad.**, when the painful swelling of the gums continues, or for a throbbing pain as if blood were entering the tooth, or a drawing pain; the pains worse after eating, and in a warm room, or at night.

15. **Carb. veg.**, when **Mercur.** or **Arsen.** gives some relief, without effecting a perfect cure; also in persons who have taken much calomel, particularly when the gums bleed, and are detached from the teeth; the teeth are loosened, become ulcerated, and ache when touched by the tongue; worse after eating, with drawing and tearing pains in the incisors.

16. **Sulphur** is most suitable for jumping pain in hollow teeth —extending to the upper and lower jaw, or to the ear; for swelling of the gums, attended with throbbing pain, bleeding of the gums, and swellings around old stumps; for toothache in the evening, or in the air, from draught, worse when rinsing the mouth with cold water.

17. **Phosphor.** for toothache from washing or from having had the hands in cold or warm water.

18. **Cepa** for toothache with cold in the head, which gets better when the catarrh becomes worse, and which gets worse when the catarrh ceases; from damp, cold weather, and wind; it commences on the left and goes to the right side; is worse in the warm room; throbbing, drawing, pressing pains, with swelling of the cheek; worse when chewing; better from cold water; the teeth become yellow; for people who have an offensive breath, or who are fond of being in the open air and like to wash themselves frequently.

19. **Arsenic.** when the teeth are loose and elongated, with constant jerking or burning, and tearing in the gums, worse when touched, when lying on the affected side, and when at rest, and also from cold; the pains are mitigated by the heat of the stove, by hot applications, or by sitting up in bed; it is particularly indicated when the pains are very debilitating.

20. **Ant. crud.** is the principal remedy for pains in hollow teeth, of a boring, digging, tearing, jerking character, which sometimes penetrate into the head; the pains are aggravated in the evening in bed, after eating, by cold water; and better when walking in the open air.

21. **Bryon.** for passionate, irritable, cross, obstinate people; pain

occasionally in hollow but more frequently in healthy teeth; shooting pains with twitching towards the ear; tearing pain extending to the cheek, and acute pains as if caused by an exposed nerve; sensitiveness and pain in the decayed teeth from contact with the air; the teeth feel as if too long and loose, and when chewing they feel as if they would fall out. The pains are aggravated by smoking or chewing tobacco; from the introduction of any thing warm into the mouth—better in the open air—sometimes relieved by cold water, but only momentarily, and also when lying on the affected cheek, but worse when lying on the other. Likewise, when the pain shoots from one tooth into the other, and also into the head and cheeks.

22. **Rhus** for the same painful sensation of elongation and looseness of the teeth, as **Bryon.**, and also when they feel as if they were asleep, (**China, Dulcam.**,) and hollow, or sensitive to the air; the gums are swollen, burn, and itch like an ulcer, or they are sore and detached from the teeth; for jumping, shooting, or drawing pain, as if the teeth were being torn out, (**Pulsat.**) or pressed into their sockets, (**Staphis.**) or for slow pricking or throbbing or tearing in all the teeth, extending into the jaws and temporal bones, with a painful soreness of one side of the face, from taking cold, or from vexation, worse in the air, insufferable during the night, and mitigated by heat; sometimes accompanied by an offensive smell from the carious teeth. It suits best for quiet persons (unlike **Bryon.**) who are disposed to sadness and melancholy, or are easily agitated and frightened (similar to **Bellad.**).

23. **Staphis.**, when the teeth become black and hollow, the gums pale, white, ulcerated, and swollen—aching when being touched; intense gnawing, drawing, or tearing pains in decayed teeth, particularly in the roots, or extending through a whole row, or when the pain shoots from a hollow tooth into the ear, with throbbing in the temple—worse in the open air, from drinking any thing cold, from eating, and particularly during the night or toward morning.

24. **Laches.**, pain in all the decayed teeth during rush of the blood to the head; drawing, tearing, throbbing, boring pain in the jaw-bones; hollow teeth feel too long; pain extending down the throat; better when pus is discharged; gums swollen, bleeding easily, or they are bluish-red, beating and burning, worse from any thing warm; toothache worse after warm and cold

drinks, after eating and awaking; with headache, beating over the eyes, stitches in the ears, swelling of the cheek; pains in the limbs of the opposite side, chills, fever, and thirst. It is particularly suited for colds in damp, warm, spring weather; during menstruation, the smaller the discharge the greater the pain, at the cessation of the menstruation; for melancholic and choleric persons, for persons of vivid imagination; after long-continued grief, and after the abuse of mercury.

25. **Phosph. ac.** is suitable for bleeding and swollen gums; tearing pains which are worse when warm in bed, and also from heat and from cold, burning in the front teeth during the night; pains from hollow teeth, extending into the head.

26. **Ap. vir.** for the most violent pains in the gums, also for jerks and throbbing in the molars, with involuntary, sudden biting together of the teeth, headache and bleeding of the gums.

27. **Silic.** for tedious, boring, tearing pains, day and night, worse during the night, spreading over the whole cheek, also into the bones of the face; discharge of offensive matter from openings near the roots of the teeth, or from the gums; swelling of the jaw.

28. **Dulcam.** is sometimes useful for toothache proceeding from cold, particularly when accompanied by diarrhœa, and when **Chamom.** does not answer; also when there is at the same time confusion of the head, or when the toothache is accompanied by profuse salivation, (similar in this to **Bellad.** and **Mercur.**) and the teeth feel blunt.

29. **Calcar.**, for toothache in pregnant females; pains in hollow teeth, especially around loose stumps; pressing, drawing, jerking soreness; drawing, pricking, rooting, gnawing, grubbing, throbbing pains, with swelled gums, which are sore, bleed easily, throb and pain; it is only suitable when there is determination of blood toward the head, particularly during the night; when the pains are caused by taking cold, or are aggravated by cold or a draught of air; the patient can neither bear warm nor cold drinks—even noise makes it worse. Fistula dentalis.

30. **Caustic.**, for toothache arising from breathing in the open air, generally attended with stinging, throbbing pain, and a feeling of soreness; or the teeth feel painfully loose and lengthened, as if forced out of their sockets, (**Arnica, Phosph. ac.**); when there are ulcers at the roots of the teeth, the gums suppurating are swollen and very tender. The pain frequently affects the whole of the left side of the face, especially at night when the patient

lies on it, and is equally sensitive to heat and cold; in long-continued or often-returning colds. After grief; melancholy mood; profuse, badly smelling sweat at night.

31. **Clemat.**, drawing, stitching, worse at night; better for a short time by holding cold water in the mouth, or sucking at the tooth, and in the open air.

32. **Kali bichr.**, pain in molar bones worse from coughing.

33. **Kali carb.**, stitch pain, and tearing up into the head and eye, with dizziness; chilliness, dry skin and bad alkaline smell from mouth; worse from chewing.

34. **Magn. carb.** and **phosph.**, pain is worse at night, drives out of bed.

35. **Natr. sulph.**, pain is better from holding cold water in mouth, and is brought on again by taking hot water or hot coffee in the mouth.

36. **Petrol.**, abscess at root of tooth, with swelling of left lower jaw, painful to touch and on stooping.

37. **Plant. maj.**, aching in decayed teeth, or shooting up left side of face; face red. Is a popular remedy.

38. **Sabad.**, hot or cold food or drink, also cold air produce or increase the pain.

39. **Sepia**, chronic cases; caries; waterbrash during pain; meclimaxis; leucorrhœa.

40. **Spigel.**, pain leaves during eating and reappears afterwards, with palpitation of the heart.

41. **Sulph. ac.**, pain begins slowly to increase, growing to an almost unbearable degree when it suddenly ceases.

42. **Thuja**, with decay of the teeth commencing close to the gums.

Swelled Face.

When the cheek remains swollen after the toothache has ceased, it may be removed by giving **Pulsat.**, if **Mercur.** or **Chamom.** have been previously taken for the pain; or **Mercur.** after **Pulsat.** or **Bellad.**; or **Bellad.** after **Mercur.**; or **Sulphur**, after **Bellad.**, **Bryon.**, **Arsen.**, etc. If the swelling is red, as in erysipelas, **Mercur.** should be given; if less red, but hard and stiff, **Arnica.** **Hepar**, when the swelling begins to soften, and appears as if about to suppurate, followed by a dose or two of **Laches.**, if **Hepar** does not effect a speedy abatement of the swelling, and then by **Hepar** again or by **Mercur.**, if the latter have not been taken before.

THE TONGUE.

To this remarkable piece of furniture of the human economy great attention has been paid by physicians of all shades and in all times. And, indeed, it often presents quite characteristic diagnostic as well as therapeutic hints. The most important of these features are the following:

1. Its Color.

It is either *too red* all over, as in scarlet fever, with considerably raised papillæ—whence the name *strawberry tongue*—or *red and dry*, as in inflammations of the brain and its membranes; in inflammation of the thoracic viscera and mucous membranes of the stomach and intestines; or *red on the edges and on the tip, or a red, dry streak in the middle of the tongue* in typhoid fevers, or *red, clean and glossy*, indicating great fever heat, congestion to the head, impending delirium, and, in gastric fevers, the transition into the typhoid state; and if, at the same time, *cracked*, ulceration of the bowels; or red, moist and smooth, in chronic affections of the stomach.

A pale tongue is found in chills; in spasms; after loss of vital fluids; in chlorosis, dropsy, and general exhaustion. When it sets in in exanthematic, gastric, or bilious fevers, it denotes a fatal issue.

A lead-colored tongue is found in cholera, in mortification of the lungs and stomach, in scirrhus of the tongue.

A lead-colored tongue, with thrush, denotes impending death under all circumstances.

A bluish tongue is a sign of impeded circulation of blood, and, therefore, it may be found in paroxysms of asthma, whooping-cough, croup, bronchitis, pneumonia, heart diseases, dropsy of the chest, and cyanosis. Scurvy and mercurial inflammation of the tongue have also a bluish hue.

2. Its Humectation.

A moist tongue is, in general, a favorable sign. But in putrid fevers, with exhausting perspiration, it has no such favorable meaning.

A constantly moist tongue in soporous conditions denotes great exhaustion.

A dry tongue is found in a great many different morbid condi-

tions, especially in feverish affections, particularly in such as have a tendency to sensorial disturbances.

Great dryness of the tongue in typhus cerebralis is, according to Schoenlein, an unfavorable sign.

Dryness of the tongue in infants is a forerunner of thrush or internal inflammation.

3. Its Temperature.

A hot tongue is found in congestive and inflammatory states of different parts of the body; in infants before thrush appears.

A cold tongue is found in chills, violent spasms, after great loss of blood, internal mortification, apoplexy, cholera. In fevers it denotes greatest prostration and impending death.

4. Its Covering or Coating.

We must bear in mind that the tongue is coated or furred without indicating any disordered state of the system—in the morning by an empty stomach; after siesta; after night-watching, and with habitual smokers of tobacco.

A coating of the root of the tongue does not mean much; in a slight degree everyone has it, even in the best of health.

A coating *on the tip* of the tongue is said to be found in phthisical persons.

One-sided coating is said to be found in one-sided complaints, as prosopalgia, paralysis; in one-sided lung diseases; in affections of the liver and spleen.

A patchy or map tongue, the so-called pityriasis linguæ, is produced merely by a stouter layer of epithelium around the places of thinner covering. A systemic cause for this affection is not known, although it may possibly be connected with some abnormal states of the stomach.

A thick, white coating occurs most extensively in affections of the fauces; but also in gastric derangements.

The *yellow coating* is generally believed to be bilious; *single yellow streaks* on a white-coated tongue indicate obstinacy of the disease.

A peculiar buff leather appearance is presented in cases of enteritis and hepatitis; also in tonsillitis.

A dark brown coating exists in malignant fevers, and in hæmorrhages from the mouth.

A black coating, in *dysentery,* indicates exhaustion—mortification

—death. *In jaundice* it denotes organic diseases of the liver, spleen, such as induration, tubercles, abscesses. *In small-pox* it is quite an unfavorable sign.

5. Its Form and Size

We find *a large, long* tongue most conspicuously in chronic hydrocephalus and cretins.

A small tongue, if not congenital, in atrophy, consumptive diseases, and long-standing paralysis of the tongue; especially if caused from an irritation of the brain or spinal marrow.

A sudden diminution in size denotes, in inflammatory diseases of the lungs and liver, formation of abscesses; also general exhaustion; especially in putrid and typhoid fevers.

A gradual decrease, in acute diseases, denotes gravity and obstinacy of such diseases, and is a sign of a dangerous affection of the brain. (Sprengel.)

A broad tongue is found in rhachitis, scrofula, inclination to abdominal affections and in intermittent fevers.

A narrow, pointed tongue is said to be found in persons who are subject to spitting of blood, tuberculosis, and internal inflammations.

A thick, swollen tongue is found in rhachitis, cretins, chronic dropsy of the head, in obstinate dyspnœa and chronic inflammation of the mucous membrane of the stomach; also in intermittent fevers, catarrhal affections, mercurial salivation, inflammation of the tongue, in old drunkards; after death by strangulation or suffocation.

A swollen and heavy tongue in old age is the forerunner of apoplexy; the same in drunkards. In fevers, if associated with dryness and stammering speech, it denotes congestion of the brain. In croup, pleurisy and pneumonia, it is a bad sign, just as bad as its sudden diminution, without improvement of the other symptoms. (Hippocrates.)

A thin, like a small, tongue is found in atrophy, consumptive diseases.

Tumors on the tongue, if hard, brownish-red, with bluish blood-vessels interwoven, are of a scirrhous nature.

Single lumps and *fleshy excrescences* on the tongue are found in elephantiasis.

6. Its Consistency.

We find *a hard* tongue associated with great dryness of the tongue in congestion, inflammation, in fevers, in tonic spasms, in scirrhus and other degenerations of the substance of the tongue.

A soft tongue we find in catarrhal affections, in chronic mucous diarrhœa, gastric derangements and in paralysis of the tongue. When *soft*, the teeth generally show their imprints on its sides—often found after mercurial poisoning. In brain diseases a soft tongue is a bad sign.

7. Cracks and Fissures

On the dry tongue, sometimes deep, bleeding and suppurating, are found in typhoid fever, in small-pox, dysentery.

8. Paralysis

Of the tongue, which manifests itself by an imperfect, stammering speech, is often the consequence of apoplexy, softening, or other affections of the brain.

Its *immobility* and its *trembling* are signs of torpor of the brain, especially in consequence of typhoid conditions, puerperal fever and septicæmia.

THERAPEUTIC HINTS.—*A red tongue all over* with considerable raised papillæ: **Arum triph., Bellad., Hyosc., Merc. corr., Tart. emet.**

Red, glistening tongue: **Kali bichr., Laches.**

Red tip: **Arg. nitr., Morphium.**

Red tip in the shape of a triangle: **Rhus tox.**

Red tip, undefined and red borders: **Sulphur.**

Red borders: **Bellad., Bryon., Morphium, Nux vom., Sulphur.**

Red streak in the middle of a yellowish coated tongue: **Ver. vir.**

Lead-colored tongue: **Arsen.**

Bluish tongue: **Arsen., Digit., Mur. ac., Thuja.**

White, thick coating: **Ant. crud., Arsen., Bryon.** and many others.

Whole tongue as if painted white: **Glonoin.**

White coating with cracks across the middle: **Kobalt.**

White coating only on one side: **Rhus tox.**

A white streak on both sides: **Caustic.**

In the middle only: **Bryon., Phosphor.**

On the root only, strongly marked: **Sepia,**

Map tongue: **Arsen., Lac. vac., Laches., Natr. mur., Nitr. ac., Tarax.,**

Yellow coating: Many remedies.

Brown coating: **Arsen., Bellad., Cactus, Coccul., Kali bichr., Merc. prot., Plumbum, Secale, Silic., Spongia, Sulphur.**

A dry, white tongue, without thirst: **Bryon., Pulsat.**

Dry, white, without thirst and paralyzed: **Nux mosch.**

Dry, white, and feeling as if burnt or scalded: **Psorin., Pulsat., Sepia.**

Dry and cracked: **Arsen., Bellad., Chamom., Kali bichr., Laches., Rhus tox., Ver. alb.**

Dry and red: **Arg. nitr., Bellad., Chamom., Hyosc., Laches., Lycop., Morphium.**

Dry, red and cracked at the tip: **Kali bichr., Laches., Rhus tox., Sulphur.**

A black coating: **Arsen., China, Elaps., Laches., Mercur., Opium, Secale, Ver. alb.**

A soft tongue, with imprints of teeth: **Mercur., Rhus tox., Stramon.**

A clean tongue with gastric and other derangements: **Cina, Digit.**

Trembling and inability to protrude the tongue in typhoid conditions: **Laches.**

Heavy, trembling tongue, with falling of lower jaw in typhoid conditions: **Lycop.**

Spasmodic darting of the tongue out of mouth in typhoid conditions: **Lycop.**

Protruding of tongue with silly expression in diphtheria: **Lycop.**

Protruding, cold and lame: **Hydr. ac.**

Paralysis of tongue: Acon., Arsen., **Baryt. carb.,** Bellad., **Caustic., Dulcam.,** Graphit., **Hyosc.,** Laches., **Nux mosch., Opium, Plumbum, Stramon.**

Difficulty of moving the tongue: **Anac., Bellad., Calc. carb., Lycop.**

Heavy tongue: **Anac., Bellad., Carb. veg., Colchic., Lycop., Mur. ac. Natr. mur., Plumbum.**

Stiffness of tongue: Borax, Colchic., Euphras., Laches., Natr. mur.

Glossitis, Inflammation of the Tongue.

We understand by this name an infiltration of the parenchyma of the tongue, which is either confined to only a portion of the tongue, **Partial glossitis,** or pervades the entire organ, **Glossitis diffusa universalis.** A mere superficial inflammation of the mucous membrane of the tongue belongs as part to inflammatory processes of the general mucous membrane of the mouth.

The most important symptom of an **Universal glossitis** is the rapid swelling of the tongue, which in a day or two may acquire

such dimensions, as to prevent by its pressure upon the pharynx and epiglottis not only swallowing, but also breathing and to cause death by suffocation in a few hours. The patient is seized with paroxysms of asphyxia, as in croup, becomes cyanotic and suffocates, if breathing is not restored. The tongue, having not room in the mouth, also protrudes, and presses sidewise between the back teeth, causing deep indentations with immediate disposition to the formation of ulcers. The neighboring lymphatic and salivary glands also become swollen. The pain is severe, and extends to the ears and throat. Its course is rapid, terminating either, as before stated, in death by suffocation, or in a gradual subsidence of the swelling, or in the formation of an abscess, which mostly breaks through the surface of the tongue. Even gangrenous destruction of large portions of the tongue has been observed as a result of mercurial glossitis, and at times there remain circumscribed indurations, with a disposition to renewed attacks.

Partial glossitis usually commences as a painful tumor from the size of a pea to that of a bean on the back part of the tongue, which gradually suppurates, finally breaks and discharges. It is not attended with any special disturbance of the general health.

The Causes of a genuine parenchymal glossitis are not clear by any means. Some have recorded epidemics of this disease; others have observed it as a consequence of anthrax poison; others as the result of mercurial poisoning, and still others as the effect of the sting of a wasp, bee, or hornet. Sporadic cases of glossitis have in nowise been etiologically explained. The most fatal are those caused by the poison of anthrax—**Glossanthrax**—or carbuncle of the tongue.

THERAPEUTIC HINTS.—If anthrax, bee, wasp and hornet-stings, and mercurial poisoning are set down as causes of glossitis, we naturally will find powerful remedies for this disease in:

Anthrac., especially when there is great burning and a disposition to gangrene; after Arsen.

Apis, when there is stinging and burning pain, with blisters on the tongue.

Merc. sol., when there is ulceration, and great flabbiness of the tongue, with salivation.

Besides compare: Plumbum, Ran. scel., Sepia, and

Arsen., great burning and tendency to gangrene.

Laches., blisters which change into ulcers.

Petrol., fetid salivation.

Sulphur, ulcerated tongue.

Camphora, or **Natr. mur.**, when caused by an insect sting.

Cupr. ac., **Calc. carb.**, **Hepar**, **Nitr. ac.**, **Sulphur**, after abuse of mercury.

Canthar., after scalding the tongue.

Calc. carb., **Carb. veg.**, **Conium**, **Hepar**, **Lycop.**, **Mezer.**, **Silic.**, **Sulphur**, when indurations remain and the case becomes chronic.

Cancer of the Tongue

Is of the epithelial kind and commences usually at the edge, near the tip of the tongue, as a small, hard lump, which after a while forms an ulcer of a roundish shape, with raised edges and uneven bottom. It distinguishes itself from every other ulcer by its continuous encroachments, by its hard, lardaceous bottom, by the viscid, milky juice which can be squeezed out by pressure upon its edges, and by the lancinating, boring, burning pains, with which it is attended, robbing the patient of rest at night, and not unfrequently leading him to suicide. By-and-by the adjacent parts of the tongue begin to swell, and the cancer itself spreads either upon the superior or inferior surface of the tongue. In its further progress the motion of the tongue becomes impeded, and the swallowing of solid food impossible. A great deal of saliva is secreted, and as the swallowing is painful and difficult, the patient spits all the time. The glands under the tongue, and also the lymphatic glands of the neck become affected; they swell and harden; the tongue becomes firmly attached to the bottom of the mouth, so that its motion is almost destroyed; it gradually is transformed into a thick, shortened, misshapen lump, with round protuberances upon it, which break and emit a terrible smell. Sometimes the glands of the neck and the region of the parotid glands swell to such an extent that it is impossible for the patient to open the mouth, and he gradually sinks under excruciating suffering, starvation and exhaustion. The disease is slow, lasting from one to three years.

THERAPEUTIC HINTS.—Compare Arsen., Caustic., Carb. an. and veg., Conium, Hydrast., **Laches.**, Nitr. ac., Phytol., Sepia, **Silic.**, Sulphur.

THE SALIVARY GLANDS AND THEIR DUCTS.

There are three pairs of such glands: the *parotid*, which is situated near the ear on each side; the *submaxillary*, lying in the posterior angle of the submaxillary triangle of the neck on each side; and the *sublingual*, which is imbedded beneath the mucous membrane of the floor of the mouth on each side of the frænum linguæ. The excretory ducts of the parotid, called *Stenon's* ducts, open at the internal surface of the cheeks, opposite the second molar tooth of the upper jaw; those of the submaxillary, called *Wharton's* ducts, open by the side of the frænum linguæ; and those of the sublingual, which are seven or eight in number, also open in this same locality. The product which they pour forth into the mouth is the *saliva*. This very important fluid is greatly altered by disease; but still, all the microscopical and chemical researches have failed to reveal any facts which can be considered of diagnostic value.

The saliva varies in **Quantity.**

There is *normally* less secretion in the first four months of infancy, and also in the last years of old age. But its secretion may be *abnormally* lessened by deficiency of beverage, or by different pathological conditions, which induce copious secretions of fluids, either through the skin, or kidneys, or serous membranes.

An increase of saliva (salivation, ptyalism) may be caused by various drugs, as our Materia Medica shows; but the most known and the most virulent is that caused by *mercury*, being accompanied by a most sickening, penetrating smell from the mouth, swelling and inflammation of the gums, loosening and falling out of the teeth, stomatitis, and ulceration of the mucous membrane. We find an increase of saliva also in many diseases of the cavity of the mouth, of the tongue, in caries of the teeth, in necrosis of the jaw, during the eruption of the milk teeth, in acute and chronic irritations of the parotid and submaxillary glands, during the eruption of small-pox in the mouth; sometimes at the commencement of typhus; in consequence of irritation of the trifacial, the facial and the glosso-pharyngeal nerves; in consequence of diseases of the stomach, of the pancreas and spleen; in intermittents; during pregnancy, menstrual disturbances, climaxis and in many hysterical conditions.

The **Color** of the saliva may also be changed.

A *blue* color has been observed in slow poisoning cases by lead.

Yellow, even *greenish* saliva has been found in liver complaints and jaundice.

A *red, bloody* saliva in different morbid conditions, when it becomes mixed with blood, as in hæmorrhage from the mouth or nose, inflamed and bleeding gums, etc. But has also been found in suppression of hæmorrhoidal and menstrual discharges. After external injury of the head, bloody saliva is, like bleeding from the ears, a sign of fracture of the skull bones.

Its **Chemical reaction** in a healthy state is slightly *alkaline;* if *it be acid*, it indicates a disturbance in the digestive organs. It may also become acid in diseases of the intestines, in rachitis, gout, and in scrofulous conditions. In a normal state, saliva contains more or less sulphocyanide of potash or soda, which can be easily detected by adding a drop of sesquioxide of iron to some saliva, which changes it to a deep-red color. During small-pox this substance seems to be wanting in the saliva, and be present in the contents of the pustules.

Parotitis.

1. Its *idiopathic* form is known under the name of **Mumps.** It frequently appears epidemically, and is contagious. Children from two to fifteen years of age are most prevalently affected, while nurslings and old people are exempt. One attack protects against re-infection.

Its outset may not be marked by any precursory symptoms; sometimes it is preceded by pains in the limbs, headache, loss of appetite, chilliness and feverishness towards evening; sometimes by vomiting and diarrhœa, great anxiety, fainting, even convulsions. Its period of incubation is estimated from about six to eight or ten days. The inflammation of the gland manifests itself by pain in the region where the affected gland is situated, especially when opening the mouth, and a swelling below the lobe of the ear—almost always only on one side,— which rapidly increases, and gives to the face an odd look. This swelling is of a doughy feel and never sharply circumscribed; it is caused by enlargement of the gland itself, and still more by an œdematous infiltration of the adjacent connective tissue, and may, indeed, attain to such an enormity that the movements of expression of the face become entirely suspended, giving to the patient an idiotic appearance. It also extends to the tonsils, the pharynx,

and may invade even the larynx, when corresponding symptoms will develop. The skin over the swelling is either pale, waxy, glistening or somewhat reddened, or of a purplish hue.

Besides stiffness, pain and incapability of all movements which talking, chewing and swallowing would require, the patients are sometimes troubled with hardness of hearing, pain in the ear, salivation or great dryness in the mouth, loss of appetite, vomiting, constipation and even with symptoms of cerebral hyperæmia, the result of pressure upon the veins in the neck.

As a rule only one parotid is thus attacked; sometimes, however the inflammation goes from one side to the other successively, and this lengthens the course of the disease for a few days; a simultaneous attack of both glands has not been observed.

The elevation of temperature and increased rapidity of the pulse, in most epidemics, is of no great amount; by the fourth or fifth day usually all fever has left; in some cases, however, a rise of temperature in the evening to 104° F. for several days, has been observed.

In most cases the local and general symptoms have culminated in from three to six days, when they gradually subside in about the same length of time, so that the entire morbid process is completed in from one to two weeks.

At times, however, we meet with complications in pubescent youths and men, consisting of an inflammation of one testicle, most commonly that of the right side, or of both sides *successively*, in the same manner as a bilateral parotitis. It does not set in until the parotideal inflammation has ceased, and is attended with a renewal of the fever. In some cases there is an epididymitis combined with an acute hydrocele and œdema of the subcutaneous connective tissue of the scrotum; in severe cases there is also a gonorrhœa-like discharge from the urethra and burning pain during micturition. Patients suffering with gonorrhœa, on the contrary, are according to Blondeau, not at all disposed to orchitis, and the mumps generally pursues its course free from all complications.

In the female sex a metastatic swelling of the mammæ or the external genitals, of the ovaries or of the inguinal glands, have been observed, while in still other cases the conjunctiva and mucous membrane of the throat, urethra and vulva have become involved. Some cases terminate in gangrenous destruction of the gland for unknown causes.

THERAPEUTIC HINTS.—**Bellad.**, *bright red* swelling, especially on *right* side; fever and brain symptoms.

Mercur., pale swelling, little fever, often indicated.

Rhus tox., *dark red* swelling, especially on *left side*, or going from left to right; restlessness and fever.

Euph. off., if Rhus tox. should not help, also dark red color, with burning and stinging pain.

Carb. veg., if Mercur. should not be sufficient or should have been abused; lingering fever; also when there are hoarseness or metastatic symptoms of the stomach.

Coccul., if Carb. veg. should not relieve the lingering fever.

Arsen., Aurum, Carb. veg., Nux vom., Puls., in metastasis to testicles.

Arnica, testicles inflamed; great tenderness; loose stools during day; complains of hardness of bed on which he lies.

Apis, Laches., Pulsat., Sulphur, metastasis to female organs.

2. The *symptomatic* form of parotitis, called **Deuteropathic** or **Metastatic parotitis**, is most frequently associated with typhus in all its forms, with scarlet fever, measles, and small-pox; with pyæmia, puerperal fever, dysentery, typhoid cholera, and in the tropics, with yellow fever.

The swelling of a metastatic parotitis is much harder and more defined, and also more prone to suppuration than that of mumps. In fact, absorption occurs only rarely in metastatic parotitis; it goes on to suppuration or even to mortification, if the patient lives long enough. If it breaks in time and discharges fully, cicatrization by granulation may follow; or new abscesses in other parts of the gland may form and fistulous openings be the result; or the walls of the abscess may be transformed into an ichorous cavity and finally become gangrenescent, involving by degrees adjacent parts by further infiltration and gangrene. In the latter case the discharge assumes a cadaverous odor and consists of gangrenous shreds; the external skin darkens and becomes black.

Its Prognosis depends much upon the nature of the disease which it attends. As a rule it may be stated, "that it is the more unfavorable and dangerous the earlier it appears in connection with typhus, scarlatina, etc., while its course is mostly favorable when it occurs during convalescence from these infectious diseases."

THERAPEUTIC HINTS.—When suppurating: **Arsen., Hepar, Phosphor., Silic.**

When fistulous openings have formed: **Lycop., Nitr. ac., Phytol.**

When indurated: **Baryt. mur., Calc. carb., Carb. veg., Clemat., Conium, Iodium, Kali carb., Lycop., Silic., Sulphur.**

When gangrenous: **Kreosot., Arsen., Laches.**

After scarlet fever: **Arsen., Baryt. mur., China, Kali carb., Laches., Lycop., Nitr. ac., Rhus tox., Silic.**

Ranula, Frog.

It consists of a swelling on the floor of the mouth under the tongue, either in the middle, or on one side of the frænum linguæ, caused by a widening of Wharton's duct in consequence of obstruction by minute foreign bodies which have become lodged there and incrustated. It presents itself on inspection as a soft, elastic, fluctuating and transparent kind of blister or bag, whose sheath is similar to a fine serous membrane, and the contents of which consist of a gluey, transparent, pale-yellowish or brownish fluid, of alkaline reaction, and without microscopic elements. It varies considerably in size and form, the latter depending somewhat on the former. When small it is globular; but as it increases its shape is modified by the surrounding tissues. Cysts and abscesses are also formed in this locality with which ranula must not be confounded.

THERAPEUTIC HINTS.—Compare **Bellad., Calc. carb., Fluor. ac., Mercur., Mezer., Nitr. ac., Thuja.**

THE TONSILS

Lie between the two palatine arches and generally project distinctly beyond them, though in a variable degree. Their form is that of an oval disc, sometimes of a flattened globe. Their size varies much, so that no positive volume can be determined on. Their free superior surface, being moderately red, presents from ten to sixteen round or linear openings, which are barely visible; sometimes they are wider and more like fissures. They lead into longer or shorter fissures (lacunæ, sinuses), running perpendicularly or obliquely in various directions, and sometimes giving off branches. The lacunæ are lined with a thin but uniform layer of epithelium. The tissue surrounding the lacunæ consists of follicles and interfollicular tissue. The follicles are composed of

reticular tissue, with few capillaries, and of small, round cells imbedded in them. The interfollicular tissue is of an essentially similar character, only it is richer in capillaries, and contains small arteries and veins. The framework of the tonsils consists of a fibrous connective tissue, by which they are also surrounded and fastened to different pharyngeal muscles.

Inflammation of the Tonsils; Amygdalitis; Tonsillitis; Angina tonsillaris.

There is a **Simple catarrhal inflammation** of the mucous membrane covering the tonsils, which is in most cases only part of a general pharyngeal catarrh. A **Lacunal** or **Follicular catarrh of the tonsils** is deeper, produces a thin or thick whitish, yellowish, curdy substance which, when thick, adheres tightly and consists of epithelium and pus. It may be confounded with herpetic angina, mild diphtheritis, or even with superficial abscess of the tonsil. The tonsils in such cases are always more or less swollen and the palatine arches inflamed. This morbid process yields mostly in a few days after a spontaneous evacuation of the epithelial and purulent contents; or the contents may dessicate, and then become foul, or calcareous. Those little, cheesy lumps, which at times with some patients, when hawking forcibly, fly out of the mouth, are of this origin. In still other cases it may give rise by extension to a **Parenchymatous amygdalitis**, which is characterized by a high grade of congestive hyperæmia and serous infiltration, in consequence of which the tonsil, or tonsils—for it may be unilateral or bilateral—become enormously swollen. This state of things results either in a return to the normal form by absorption, or in an infiltration of small cells, both in the interior of the follicles and between them, and a consequent new formation of reticulated substance giving rise to a permanent hypertrophy of the tonsils; or in the formation of several abscesses. Sometimes an abscess forms in the connective tissue surrounding the tonsils—**Peritonsillar** or **Retrotonsillar abscess**—, most frequently between the tonsil and the affected palatine arch, usually the anterior arch. This affection ordinarily involves but one tonsil, sometimes the other, several days afterwards, forms a walnut-sized protuberance, which usually terminates in perforation, followed by a rapid return to the normal condition. This formation of abscesses is commonly known under the name of **Quinsy.**

In clinical practice we can not always distinguish between these different pathologico-anatomical forms; neither does it matter. Either of them, with the exception of the superficial catarrhal form, may be accompanied with great pain, swelling of one or both tonsils, impossibility of swallowing and talking, of opening the mouth or moving the head. They are mostly associated with hyperæmia, or collateral œdema of the pharynx, extending sometimes into the Eustachian tubes, with pain in the ears, or to the larynx, with dyspnœa or paroxysms of suffocation, especially on lying down. Fever attends all more severe cases, especially those with suppuration; the temperature may rise to 104° F., with morning remissions and evening exacerbations. There is loss of appetite; sometimes headache, delirium, and even convulsions have been observed in children at the commencement.

The duration of a superficial and lacunal tonsillitis varies between three and eight days, while a parenchymatous amygdalitis and a tonsillitis with abscess lasts at least eight days, frequently a week and a half, and even as long as two or three weeks. Persons once affected by tonsillitis are liable to repeated attacks. Fatal terminations are exceedingly rare.

THERAPEUTIC HINTS.—"The much recommended timely opening of tonsillar abscesses is of little use, because it is very seldom successful, and, even when it succeeds, hardly ever relieves the patient. It is somewhat different in anterior peritonsillar abscess; but even then the relief to the patient is seldom as great as after spontaneous discharge. Deep incisions are not advisable, owing to the contiguity of the carotid artery." (Wagner, allopathic authority.)

It is strange, that in some "homœopathic" works we find the use of the Bistory still advocated.

Amm. mur., both tonsils swollen; can neither swallow, talk, nor open the mouth; after taking cold.

Apis, stinging, burning pain when swallowing; dryness in mouth and throat; red, highly inflamed tonsils; œdematous swelling of fauces and glottis. Fears open air, yet cannot stand the warm room; thirstlessness.

Baryt. carb., liability to tonsillitis after slight cold, or suppressed sweat of feet; tonsils tend to suppurate; especially *right* side.

Bellad., especially *right* side; parts bright red; also swelling of

the neck, externally, painful to touch and motion; cerebral symptoms.

Hepar, sticking pain as from a fishbone in the throat when swallowing; tendency to suppurate; after mercury.

Ignat., in follicular catarrh, almost specific.

Kali hydr., or Iodium. (Kafka).

Laches., especially *left* side; choking when drinking; fluids are driven out through the nose; worse in afternoon, after sleep, from slightest touch; can't bear bed-clothes near the neck.

Mercur., dark redness; fetid ptyalism; very offensive smell from mouth; aphthæ or thick coating on the tongue.

Plumbum, angina on left side, with copious flow of purplish saliva and spasms.

Silic., in stubborn cases where abscesses are forming, yet don't break, especially *left* side.

Sulphur, when, after the bursting of the abscess, the parts still remain irritated, and the patient does not recover as fast as he should.

For chronic enlargement and induration:

Baryt. carb. and **mur.**, **Calc. carb.** and **jod.**, **Ignat.**, **Lycop.**

Phosphor., mucus in throat removed with difficulty; it is white, nearly transparent, in lumps and quite *cold* when it comes into the mouth.

Phytol., enlarged tonsils and uvula; tonsils of a bluish cast; harrassing, hawking cough, after every cold.

Psorin. and **Sulphur.**

THE UVULA AND SOFT PALATE.

These parts may be variously affected, being always more or less involved in diseases of the neighboring tissues. We have anæmia, hyperæmia, hæmorrhage, inflammation, œdema, ulceration, phlegmon, thrush, diphtheritic exudations, atrophy, syphilitic affections, morbid growths and cancer presented to our observation, and also *motor* and *sensory* disturbances.

Paralysis may be limited to the muscles of the soft palate, or may occur with paralysis of other muscles, most frequently those supplied by the facial nerve, or in connection with catarrh, phlegmonous inflammation, morbid growths, etc., and in consequence of diphtheritis, the most frequent form. Its various forms interfere more or less with swallowing, talking and breathing.

Anæsthesia of the soft palate, mostly with diminished reflex irritability, is found in insane patients, and also in consequence of the influence of some substances upon the periphery (ice, bromide of potassium, morphine, lye, etc.). Diphtheritic paralysis is almost always combined with anæsthesia.

Hyperæsthesia occurs as well with the maintenance of a normal appearance of the parts, as in the various disturbances of circulation and the inflammations.

What in common life is styled "falling of the palate" is an **inflammation and œdema of the uvula**, by which it becomes greatly enlarged, causing a constant hacking and hemming, and interfering with swallowing and breathing.

THERAPEUTIC HINTS.—The remedies which act especially upon the uvula and soft palate, are: Acon., Argent., Bellad., Coffea, Crot. tigl., Gelsem., Hepar., Ignat., Iodium, Kali bichr., Laches., Merc. sol., Merc. subl., Natr. mur., Nitr. ac., Nux vom., Phosphor., Phytol., Sulphur.

Angina Faucium, Angina Catarrhalis, Sore Throat.

This catarrhal affection frequently involves the mucous membrane which covers the soft palate, tonsils and back part of the throat (fauces). The parts redden and swell, are at first dry and afterwards covered with a whitish tough phlegm, which especially assumes to a certain degree on the tonsils an appearance of diphtheritis. In its acute form it is mostly attended with some fever, painful deglutition, a heavily coated tongue, bad taste and an increase of saliva. Deglutition in bad cases, where the palatine and pharyngeal muscles are involved, becomes utterly impossible, so that an attempt at swallowing causes either choking or an expulsion of the fluid through the nose. For this reason, also, the voice of the patient assumes a nasal twang in talking. Sometimes the inflammation extends higher up into the naso-pharyngeal cavity, affecting the Eustachian tubes and causing hardness of hearing and stitch-pain in the ears.

It is caused either by atmospheric influences and a constitutional disposition (*idiopathic* form), or is part and portion of certain acute diseases, such as scarlet fever, small-pox, measles, etc. (*symptomatic* form). At times angina faucium prevails epidemically.

THERAPEUTIC HINTS.—**Acon.**, dryness with burning, stinging and drawing in the throat, making swallowing painful, feverishness, impatience and restlessness. Cold west and north-west winds.

Apis, burning, stinging pain, or pressing as from a hard body; redness and swelling of tonsils, uvula and tongue; abundant collection of soapy saliva; painful deglutition or impossibility to swallow.

Bellad., scarlet redness; stitches extend into the ear; painful deglutition or impossibility to swallow, the fluid escaping through the nose; swelling of cervical glands; red face; congestion to the head; headache; fever.

Bryon., gastric derangement; tongue heavily coated, dirty yellowish; insipid, pappy taste; constipation; chilliness; motion increases the pain; irritableness.

Ignat., lump in throat; pain in throat worse between the acts of swallowing; whitish tough mucus in spots on tonsils, simulating diphtheria.

Laches., throat feels constricted; lump in throat; constant desire to swallow, though difficult and painful; neck sore to touch; all symptoms worse on left side, in the morning after sleep, and in the afternoon.

Merc. sol., redness and swelling of the parts; whitish, smeary concretions on tonsils; tongue thickly coated, whitish; flow of slime and saliva from mouth; constant inclination to swallow; pain in parotid glands and muscles of the neck. Fever exacerbation in the evening.

Merc. corr. subl., when there is no swelling of the tonsils. Very often subdues the inflammation quickly when given at the commencement. (Bolle.)

Nux vom., catarrh in head and throat, with a feeling of soreness, rawness, scraping and the sensation of a lump in throat on swallowing; after taking cold.

Petrol., feeling of great dryness in the throat, with abundant accumulation of mucus at the same time. Stinging, burning pain in throat during deglutition, extending into the ears and neck. Great thirst and costiveness.

Pulsat., dark, bluish redness with varicose veins, scraping rawness and dryness in throat, without thirst.

Sanguin., throat feels sore and as if scalded by hot drinks; dry and constricted; drinking does not relieve the dryness; mucous membrane feels as if it would crack, is red and inflamed.

Chronic Sore Throat, Angina Granulosa or Follicularis.

It is characterized by little, roundish, elevated spots, like peas split in half, which stand either singly, scattered over the pharyngeal wall of the fauces, or in rows or ridges extending from above downwards; or the mucous membrane of that locality appears smooth, but dry and glistening; or it is covered with a tough whitish or yellowish-greenish mucus, or brownish and bloody crusts or skinny substance, which is very difficult to detach. In these cases the catarrhal affection extends up into the naso-pharyngeal cavity, and is mostly connected with chronic nasal catarrh; but it also may spread downwards to the larynx, where its presence causes laryngeal irritation and cough. The color of the fauces varies from a bright redness with enlarged veins radiating in various directions, to a deep brown red hue; in still other cases there is very little redness. Usually it is attended with very little pain, perhaps some raw feeling or scraping, and with scarcely any difficulty in swallowing. The great annoyance of the patient is a feeling of dryness and the accumulation of tough phlegm which he constantly tries to remove by hemming and hawking, especially in the morning. In consequence of these, sometimes very violent efforts of cleansing the throat, small blood-vessels burst, which may unnecessarily alarm the patient, when he finds himself spitting blood. It is a very stubborn complaint and exercises a depressing influence upon the patient, who is kept in constant fear of going into consumption.

This kind of chronic catarrh is frequently found with public speakers, clergymen and the like, wherefore it has received the popular name of *preacher's sore throat*, an appellation which, like many popular definitions, is not altogether well defined. For although the so-called preacher's sore throat in many cases may be attended with a chronic catarrh of the fauces, the sudden giving out of the voice, or hoarseness after loud and forced speaking, is mainly the effect of overstraining the muscles of the soft palate or vocal cords.

THERAPEUTIC HINTS.—Alum., soreness, rawness, hoarseness, dryness, or secretion of thick, tough phlegm; worse in the afternoon and evening, better from eating and drinking *warm* things.

Arum triph., constant hawking; profuse secretion from posterior nares and fauces; hoarseness, worse from talking.

Arg. nitr., collection of thick, tough phlegm, causing gagging; wart-like excrescences; feeling of a pointed body in the throat when swallowing, belching, breathing, or moving the neck.

Arnica, great hoarseness from preaching or public speaking.

Caustic., burning in throat, worse on stooping; hoarseness from singing.

Elaps, sore throat, offensive discharge from the nose, occasional epistaxis. Posterior wall of throat covered with a dry, greenish-yellow membrane, wrinkled and fissured, which extends to the nares. Occasionally portions of it become detached and are expelled either by mouth or nose. Stuffiness at root of nose and dull aching from there to forehead. Smell gone. Catamenia generally profuse and dark.

Kali bichr., secretion of very ropy or stringy phlegm through the posterior nares and fauces.

Laches., much inclination to swallow, although it is very painful, with spasmodic contraction of the throat; worse on left side, and worse after sleep; can't bear any pressure about the neck.

Lycop., the fauces look brown-red; worse on right side; sometimes a hard, green-yellowish phlegm is hawked up in the morning.

Natr. carb., slight redness and continual sensation of rawness and scraping; diminished secretion, with constant desire to hawk and hem; collection of mucus in the night; painfulness of throat on swallowing and gaping.

Natr. mur., always after local applications of nitrate of silver; feeling of great dryness in the throat, and yet a constant hawking up of a transparent, thin mucus. Sensation of a plug in the throat; uvula elongated; the action of the muscles of deglutition is diminished; the food goes the wrong way, or does not go down at all.

Petrol., in dry, sore throat, with mucous secretions; stitches into the ears during deglutition, and burning in the neck.

Phosphor., when the throat is very dry, fairly glistening.

Plumbum, when the disease spreads from left to right.

Phytol., dryness, feeling as if a ball of red-hot iron had lodged in the fauces, when swallowing; can't eat hot fluids; choking sensation.

Sapo sodæ, after burning the throat by swallowing hot things.

The following hints in the form of a repertory have been prepared by Dr. F. M. Selfridge:

Uvula and fauces dark red, **Arg. nitr.**

Uvula elongated, **Bromium, Wyethia.**

Swelling and elongation of the uvula, **Iodium, Kali hydr.**

Uvula relaxed, with a sense of a plug in the throat, not relieved by swallowing, **Kali bich., Laches.**

Uvula elongated, fauces purple and swollen, **Laches.,**

Thick, tenacious mucus, obliging him to hawk, **Arg. nitr.** and **Merc. iod.**; mucus cannot be raised by hawking, **Caustic.**; mucus in fauces and posterior part of the pharynx, mornings, difficult to hawk up, **Kali carb.**

Rawness, soreness and scraping in the throat, **Arg. nitr., Caustic.**

Wart-like excrescences in the throat, feel like pointed bodies when swallowing, **Arg. nitr.**

Posterior wall of pharynx dark red, glossy, puffed, showing pale red vessels, **Kali bich.**

Burning and dryness of fauces and pharynx, **Arg. nitr., Sanguin., Wyethia.**

Burning in pharynx, extending to stomach, **Kali bichr., Wyethia, Sanguin.**

Dryness of roof of mouth, fauces and throat, **Bellad., Wyethia.**

Throat feels raw and sore, looks red and shining, **Bellad., Sanguin.**

Throat feels constricted, as if tied, **Laches.** or **Iodium.**

Dryness of the throat posteriorly, **Caustic., Wyethia.**

Constant hemming to clear the throat, **Wyethia**; of tough phlegm, **Iodium.**

Must swallow continually, feels as if the throat was too narrow, **Caustic.**

Must swallow on account of the dryness of the throat, yet without affording relief, **Wyethia.**

Throat dry with frequent empty swallowing, **Mercur., Iodium, Wyethia.**

Salivary glands much swollen, **Mercur., Iodium.**

Constant urging and desire to swallow, **Bellad.**

Increased flow of tough, ropy saliva, **Wyethia.**

Dryness in the posterior nares, **Wyethia.**

Sensation as if something was in the nasal passages; an effort to clear them through the throat affords no relief, **Wyethia.**

Difficult deglutition, **Bellad., Wyethia.**

Swelling of mucous membrane of fauces and pharynx, **Bromium, Wyethia.**

Mucous follicles swollen, giving a granular appearance to pharynx, **Wyethia.** (Clinical).

Tonsils swollen and inflamed, **Bromium.**

Inflammation of the throat with burning pain, **Iodium.**

Ulcers on fauces discharging cheesy lumps of offensive smell, **Kali bichr.**

Hawking of mucus with pain in throat pit, **Caustic.**

Hawks copious blue mucus in the morning, **Kali bichr.**

Dry cough with tickling in the larynx, **Bellad.**; in the throat-pit, **Sanguin.**; large quantities of mucus, **Iodium.**

Paroxysms of cough, brought on by phlegm in the larynx, **Kali carb.**; by fits of passion or laughing, **Arg. nitr.**

Cough with copious green sputa, **Kali hydr.**

Cough with involuntary discharge of urine, **Caustic.**

Internal soreness of larynx and throat-pit, worse in morning, **Arg. nitr.**

Internal soreness of larynx, painful to touch, **Bromium.**

Hoarseness, **Arg. nitr., Bellad., Bromium, Kali bichr.**

Hoarseness with rawness and dryness of larynx, **Laches.**

Hoarseness, worse in morning and evening, **Caustic.**

Hoarseness lasting all day, **Iodium.**

Hoarseness with pain in chest, **Kali hydr.**

Chronic laryngitis of singers, raising the voice causes coughing, **Arg. nitr.**

Dry hacking cough caused by tickling of epiglottis, **Wyethia** and **Bellad.**

Ulcers in the Fauces, Ulcerated Sore-Throat.

Chronic catarrh may terminate in ulceration; or the ulcers may be the consequence of a scrofulous diathesis; or they may have a syphilitic origin. The diagnosis of these different conditions might be accurately determined by a correct history. Besides, the diagnosis will be facilitated by considering that *catarrhal* ulcers are superficial; the *scrofulous* ulcer is deep, but has flabby, perhaps jagged edges, which do not project; the *syphilitic* ulcer, however, is deep and rounded, with elevated serpiginous and defined borders.

THERAPEUTIC HINTS.—Compare Angina Faucium.

Alum., the inflamed parts are spongy; the ulcerated surface secretes a yellow-brownish, badly-smelling pus; a boring pain from the fauces to the right temple and head.

Aurum, putrid, cheese-like smell from the mouth; deep ulcers affecting the bones; after the abuse of mercury.

Baptis., putrid, dark-looking ulcers; fetid breath; great prostration.

Hepar, after the abuse of mercury in syphilis.

Hydrast., extensively used by western Homœopathic physicians for ulcerated sore-throat; no characteristics given.

Kali bichr., deep ulcers, eating even through the velum palati; bones of the nose affected; fetid discharge from the nose; syphilitic origin.

Kali hydr., syphilitic and mercurial cachexia combined.

Laches., spasmodic contraction of the fauces when swallowing, etc. Compare Inflammation of Fauces.

Mercur., ptyalism, fetid smell; secondary syphilis.

Nitr. ac., after the abuse of mercury; syphilis.

Sanguin., rush of blood to the head; flying heat; throbbing in the head from the nape upwards; distended veins in the temples.

Retro-pharyngeal Abscess.

This affection is either an *acute suppuration* of the connective tissue between the posterior wall of the fauces and the vertebræ, occurring not unfrequently in children up to the tenth year of age, or it is *the consequence of diseases of the cervical vertebræ*, such as caries, fracture, especially of the atlas and axis. Acute suppuration of the retro-pharyngeal connective tissue usually takes a rapid course and develops symptoms like phlegmonous sore throat, in varying degrees of intensity, such as: fever, sleeplessness, dyspnœa, difficulty in deglutition, pain increased on motion of the head, stiffness in holding the head, spasms in young children, and convulsive paroxysms.

Suppuration from vertebral affections is much slower in its course and its symptoms are less prominent, with the exception of an inability to turn the head, and the difficulty of swallowing.

The abscess, left to itself, opens spontaneously and discharges its contents into the lower pharynx; or fistulous tracks are formed towards the thoracic cavity, or towards the skin of the neck.

A fatal termination may ensue by suffocation from the discharge into the larynx, especially during sleep; or from compression of the larynx by the enormous size of the tumor; or

from secondary disease of the larynx or thoracic organs caused by descent of pus into the thorax. These various possibilities determine our prognosis.

Its DIAGNOSIS we can make out by inspection and palpation, as its location (posterior wall of fauces) distinguishes it from amygdalitis; or the symptoms of vertebral affections render it at once distinguishable from other complaints.

THERAPEUTIC HINTS.—Main remedies: **Hepar, Silic.**

Acute suppuration of the connective tissue: Apis, Bellad., Bryon., Laches., Mercur., Pulsat., Rhus tox.

Affection of cervical vertebræ: Arnica, Asaf., Calc. carb., Hepar, Lycop., Mercur., Mezer., Phosphor., Silic., Sulphur.

Impossibility to swallow; fluids regurgitate through the nose: Aurum, Bellad., Laches., Lycop., Mercur., Nitr. ac., Phosphor.

Deep Inflammation of the Connective Tissue of the Throat; Angina Ludovici.

"It is a very acute inflammation and suppuration of the cellular tissue beneath the chin, in the environs of the submaxillary glands, which has been named after its earliest describer, "Ludwig," and which has appeared epidemically at various times."

The inflammation generally begins on one or the other side of the hyoid bone, rarely in the middle, just over the bone. There is extensive infiltration with disposition to undergo purulent or even ichorous degeneration. Post-mortems have shown the connective tissue and muscles of the entire submental region transformed into a semi-fluid, brownish mass, mixed with necrotic shreds of connective tissue; the submaxillary and parotid glands destroyed by gangrene; the neighboring parts intensely infiltrated even as far as the pharynx and larynx; and the periosteum of the lower jaw loosened.

The swelling in the hyoid region sets in with lighter or severer, or even complete typhous symptoms; it grows rapidly, gets harder and larger until it covers the entire anterior half of the throat as far down as the sternum.

The skin over it is tightly stretched and reddened; the lower jaw becomes immovable and deglutition impossible. Respiration and circulation are greatly interfered with by compression of the larynx, trachea and the main internal jugular vein, and

speech is made difficult or impossible by the pressure of the tumor under the tongue, which pushes it to the roof of the mouth and renders it immovable. It is attended with headache, vertigo, delirium.

In some cases the swelling may entirely subside without suppuration, although absorption goes on but slowly; in most cases suppuration sets in and the result is a shreddy pus, or a gangrenous ichor, with subsequent gangrenous destruction, septicæmia, embolism in various organs, death; or in more favorable cases fistulous ulcerations, strongly contracting cicatrices, which produce torticollis and impeded mobility of the neck, as also caries and necrosis of the jaw-bones.

Its CAUSES are said to be: topical irritations, catching cold, especially during times of prevalent rheumatism and erysipelas; and exanthematic, typhoid and puerperal conditions. Of late no epidemics of this kind have been observed.

THERAPEUTIC HINTS.—I find only one case mentioned in our literature, by Dr. J. C. Burnett, which was cured by **Acon.**, and **Iodium**, and later **Nux vom.** and **Iodium**, in alternation. Compare Raue's Annual Record, 1874, page 108.

I should suppose that **Anthrac.** and **Laches.** might be of great service in this destructive disease.

THE MUCOUS MEMBRANE OF THE MOUTH IN GENERAL.

This is a continuous membrane covering the inside of the cheeks and all the organs within the cavity of the mouth except the teeth, lining the fauces, and extending thence upwards into the nose and downwards into the œsophagus, stomach, and intestines, and by way of the larynx and trachea into the finest bronchial tubes.

The Parasitic Sore Mouth of Infants—Thrush.

"It is neither connected with inflammation, nor with the formation of ulcers, but depends upon the abundant development of a microscopic fungus, the *oïdium albicans* (Robin), which combines with the epithelium into thick, white membranes, and covers a great portion of the surface of the mouth." (Vogel.)

We may frequently foretell its coming, when we observe that the mouth of the infant is getting dry, hot, red and sticky and its secretion gives an *acid reaction*. Then after a few hours white points of the size of a pin's head appear mostly at first on the inner surface of the cheeks, quickly spreading over various other places and soon covering in some cases the entire buccal cavity, and even the pharynx and œsophagus with a white membrane. After a while its white color turns yellowish or brown if bleeding occurs from rough handling. The first few days this membrane adheres firmly to the mucous membrane; later, on about the third or fourth day it becomes loose and can easily be wiped away.

According to Reubold this fungus confines itself to the squamous epithelium solely, and therefore the larynx, trachea, and the nasal cavities, the stomach and intestines remain free from it. It has been found, however, on the lowest portions of the rectum, upon the female genitals, and excoriations of the external skin, especially in the vicinity of the mouth, on the chin and neck.

During the continuance of this fungous growth the mouth of the nursling is hot, has an acid reaction and is sensitive to touch in a degree that even nursing sometimes is painful to the child. But as long, as the affection is not complicated with intestinal catarrh, its course is quite mild and short, and passes away in a few days if proper attention is paid to cleanliness. Even if a reproduction should occur, it offers no special difficulty to cleansing and leaves the substance of the mucous membrane intact.

It is different with artificially fed children when an intestinal catarrh is superadded to the trouble. Under it the child may sink with signs of a follicular enteritis.

Causes.—The formation of this fungus is favored by acid fermentation. The secretion of the mouth is a mixture of saliva and mucus. The saliva is of alkaline reaction, more so after a meal, less so on an empty stomach. The buccal mucus, however, has an acid action, which is visibly increased on contact with atmospheric air, when acid fermentation at once begins. In young infants the secretion of mucus is in preponderance over the secretion of saliva; there is therefore a physiological tendency to acidity in a young child, and if in addition to it, the child is nourished artificially and improperly by substances which easily undergo acid fermentation, (sucking-bags, poor milk from badly cleansed bottles, etc.) an outbreak of thrush is sure to follow. We find, therefore, that thrush attacks more frequently arti-

ficially fed children than those who suck their mother's breast, and for this additional reason that the latter in sucking draw the saliva out of their salivary glands, while the easy flow from the bottle requires nothing but swallowing. I would rather have the baby fed by the spoon, as in this way chewing motions are induced and a more thorough mixture of the food with saliva is insured.

We find thrush also in *adults*, but it is of rare occurrence, and then always in consequence of protracted and exhausting diseases, such as phthisis, diabetes, cancer, etc.—setting in shortly before death. Its pathological character is identical with that described above, and its causes are the same—anomalies in the chemical composition of the fluids of the mouth, accelerated acid fermentation and absence of the movements of chewing.

THERAPEUTIC HINTS.—The remedy must be chosen according to existing symptoms which accompany this affection.

Wash the mouth always after nursing with a rag dipped in water or a mixture of wine and water.

Aethusa, vomiting of milk in lumps; diarrhœa.

Arsen., in adults and children; great burning, exhaustion, deep illness.

Baptis., last stage of consumption.

Borax, great heat and dryness in the mouth.

Chamom., child is fretful, wants to be carried about all the time; has colic, and green, sour stools.

Hepar, when worse on inside of lower lip.

Mercur., confluent thrush, changing into cankers; ptyalism; bad smell from the mouth; feverishness; green slimy stools.

Staphis., thrush changing into canker-sores with a bluish-red or yellowish bottom; more or less flow of saliva and bad smell.

Sulphur, sour smell from the mouth; stools slimy with much straining, or painless; worse in the morning.

Sulph. ac., after borax, increased flow of saliva, yellowish color of the skin.

Stomatitis Ulcerosa; Formation of Ulcers in the Cavity of the Mouth.

The mucous membrane of the mouth is subject to catarrhal inflammations. When in addition to congestion, swelling, pain,

and increased secretion, a loss of substance associates at any point, we have **Ulcerous stomatitis.** Its forms are various.

Aphthæ, or **Cankers of the mouth.** They are either the consequence of **Catarrhal erosions,** forming ulcers of a superficial nature; or of **Follicular inflammation,** producing ulcers of greater depth; or in connection with **Labial herpes** or **Hydroa,** when they evidently have the same etiological significance. Aphthæ occur chiefly in children. The follicular form is frequently found in women during menstruation, pregnancy or lactation. Often a few hours are sufficient to bring about aphthous ulcers. They are chiefly situated on the mucous membrane of the lips and cheeks; especially where it is reflected on the gums, less frequently on the gums themselves, on the palate, or on the tongue. Their floor is whitish, yellow, their edges are reddened, somewhat raised, on account of the adjoining catarrhal stomatitis; they are of an oval form and may attain the size of a bean. The follicular ulcers are small, circular and excavated. All cause great sensitiveness of the mouth, interfere materially with speaking and chewing, and are attended with an increased secretion of mucus and saliva, which, however, is not marked by any great intensity of nauseous odor, as we always find in **Stomacace,** or **Putrid sore mouth,** which is a destructive ulceration of the border of the gums, producing extensive swelling of the entire mouth and a cadaveric breath. It is mainly a disease of children, after their first dentition has been completed, but not found very frequent in private practice. Apart from children it has appeared epidemically among soldiers. Very often, when it appears sporadically, its cause can be traced to the abuse of mercury, or an enfeebled state of the system, uncleanliness, poor food, and atmospheric influences. The morbid process usually begins at the margin of the gums of the lower jaw, creeps gradually backwards, and attacks somewhat later those portions of the mucous membrane of the lips, cheeks, and tongue, which are in direct contact with the affected gums. The surface of the tongue, the hard and soft palate, as well as the pharynx, remain free from it. It is characteristically marked by great fetor, and a profuse, distinctly acrid secretion, flowing constantly from the mouth. On pressure the gums bleed easily, or bleed spontaneously, coloring the saliva brownish-red. The tongue is thickly coated and swollen, showing distinct impressions of the teeth. The adjacent lymphatic glands are also tumefied. The fever attending it is ordinarily but slight.

Ulcers dependant on some dyscrasia, such as syphilis, scorbutus, etc., will be spoken of in their respective places.

THERAPEUTIC HINTS.—Aphthæ.

Arum. triph., superficial ulceration; tumefaction of lips; catarrhal burning and biting sensation in mouth and throat.

Calc. carb., during dentition.

Hydrast., follicular and catarrhal ulcers with exceedingly tenacious mucus in the mouth.

Laches., canker sores on tip of tongue.

Lycop., under the tongue near the frænulum.

Mercur., on the gums, with ptyalism.

Natr. mur., on tongue, gums and cheeks with great burning and impeded speech.

Nux vom., gums inflamed, putrid smell from mouth; constipation.

Sulphur, after Nux vom. or Mercur.; bloody saliva; disturbed sleep.

Sulph. ac., on gums which bleed readily; ptyalism; great weakness; ecchymosed spots on skin.

Stomacace.

Arsen., edges of tongue ulcerated with great burning and pain; diarrhœa and great prostration.

Baptis., gums ulcerated, loose, dark red or purple; intolerable fetid breath; can swallow only liquids; loose, offensive stools; after abuse of mercury.

Helleb., sores flat, yellowish, with raised edges upon an inflamed basis; ptyalism; fetid smell from the mouth; glands swollen on neck and under the jaw.

Hepar, after abuse of mercury.

Kali mur., main remedy of the old school.

Mercur., ulcerated gums, tongue and cheeks; loose teeth; fetid smell. Burning pain, worse in night; diarrhœa with tenesmus. In fact it is proven to have produced this disease in its worst forms; it must, therefore, in many idiopathic cases, be almost specifically indicated.

Nitr. ac., after the abuse of mercury with fetid and acrid saliva, which causes sores on lips, chin and cheeks. Pustules with red circumference, here and there on body.

Nux vom., ulcerated gums, foul and painful swelling of gums; pimples and painful blisters in the mouth; ptyalism at night, bloody saliva; fetid odor from mouth; constipation.

Phytol., edges of tongue ulcerated, tip very red; secretion of mouth very thick and tenacious. Mercurial ptyalism.

Rhus tox., great restlessness, especially in the night; bloody saliva runs out of the mouth.

Staphis., ulcers with a bluish-red or yellowish bottom; gums swollen, painful, spongy, bleeding readily; increased bloody saliva; fetid breath.

Sulphur, gums ulcerated, swollen, receding and readily bleeding; bloody saliva; fetor; diarrhœa; sleeplessness. Frequently indicated after Nux vom.

Diphtheria, Diphtheritis.

A disease of *miasmatic-contagious* nature. The latest experimenters (Oertel, Klebs and many more), ascribe it to the action of parasitic fungi or bacteria, the *micrococcus diphtheriticus*, while others (Wagner, etc.), still content that its specific poison is entirely unknown. I shall not waste time to give a history of these two theories, since special expositions of both views have been given in Vols. I. and II. of Ziemssen's Cyclopædia and other works.

Diphtheria may localize itself in different organs.

1. In the *throat*, at times spreading to the upper pharyngeal and nasal cavities, into the Eustachian tubes and lachrymal ducts. It produces a *fibrinous exudation* which first appears on one of the tonsils, seldom simultaneously on both, in the form of roundish, dead white patches of various sizes, at the beginning closely adherent to the underlying mucous membrane and detachable, for the most part, only at the expense of a hæmorrhage. As they grow, they cover larger and larger areas, finally enveloping the tonsils, uvula, and the walls of the pharyngeal cavity in one sheet of false membrane. This membrane, after a continuance of several days, becomes gray, even blackish, and less adherent to the subjacent tissue; it consists of fibrinous exudation, the interspaces of which contain serum, or blood or pus corpuscles. "Not unfrequently globular bodies, which consist of finely punctated masses of fungus, are found in one or more layers, upon the surface of the croup membrane, and later in spots between the uppermost flattened layer of epithelium and the croupous reticulum." (Wagner.) According to Oertel, the colonies of micrococcus penetrate to the subepithelial tissue.

After several days continuance, the false membrane loosens by means of infiltration with serum or pus corpuscles, and a continual growth of new epithelium. The mucous membrane underneath is hyperæmic, sometimes dotted with variously numerous hæmorrhages, for the most part considerably infiltrated with serum, sometimes with sero-pus. In septic cases the false membrane undergoes a rapid necrosis, and proportionally with its decomposition and putrefaction, large quantities of different varieties of bacteria appear besides the micrococcus. The membrane assumes a dark brown color, and is infiltrated in broad streaks by blood corpuscles from frequent capillary hæmorrhages. An extension into the nose is characterized by a thin, purulent, greenish discharge, which excoriates the contiguous parts of the external nose.

2. In the *larynx*, *trachea* and *bronchi*. This forms a chief danger of diphtheria, and resembles in all its symptoms true croup. In a series of cases it sets in with the pharyngeal affection at the same time, in others it follows soon after, or develops not before three or four days, or even a week later. It occurs oftener in children than in adults, and much more frequently in severe than in mild cases. Its characteristic signs are the long drawn respiration, frequent, dry coughs, toneless, hoarse voice, great restlessness, and pain in the throat.

3. In the *kidneys*, causing an inflammation of their parenchyma, with hæmorrhages and growths of micrococcus. (Oertel). At the bedside it manifests itself as *albuminuria*, which, when found in the beginning, is said to denote unusual severity of the attack. In fact its intensity is thought by some writers proportionate to the severity of the disease, which others deny. In light cases it scarcely ever occurs; in severe cases it is found in one-half their number; it sets in sometimes not until several days, sometimes not until towards the termination of the disease, and is, as regards the quantity of albumen discharged, very irregularly, sometimes even intermitting for days. (Wagner.)

4. In the *heart*, especially in long-continued and severe cases, which are apt to terminate suddenly in death by paralysis of the heart. On post-mortem examination the muscles of the heart appear pale, soft, friable, fatty degenerated.

5. In the *stomach*, either by direct poisoning from swallowing the diphtheritic masses, or by an extension of the affection through the œsophagus into the stomach. It causes here, as it

does in the fauces, inflammation of the mucous membrane, exudation of fibrine, formation of ulcers and sloughs, and hæmorrhage.

6. In the *brain* and in the *spinal cord*. Post-mortem examinations have shown venous hyperæmia in the vascular linings and substance of the brain and spinal cord, also capillary hæmorrhages of various sizes scattered over different portions of these organs, with consequent softening of the surrounding substance. Buhl found in one case the spinal nerves of both sides, at the point of junction of their anterior and posterior roots, almost doubled in their thickness, and dark red on account of extravasation of blood, and in part yellow and softened.

The period of INCUBATION occupies, according to a number of well-attested observations, from two to four or five days.

Diphtheria is not in all cases of a like nature; we meet *mild*, *severe* and *septic* forms of this disease.

Its *mild forms*, which, by some, are designated as **Catarrhal diphtheria**, usually commence with fever and soreness in the throat. The temperature may rise from 101° to 105° F. in the first days, showing always evening exacerbations with a corresponding acceleration of the pulse from 120 to 140. From the fourth or sixth day the temperature gradually declines. The fauces look at the beginning only inflamed, but show in a short time the characteristic patches first on one tonsil, and then on the other, extending also in some cases upon the contiguous portions of the palatine arches, and in some upon the lateral portions of the uvula. With this we find the lymphatic glands of the jaw, regularly, somewhat swollen, a distinctive feature of diphtheria from a mere catarrhal inflammation of the throat. The fever is, in most instances, attended with more or less, sometimes excessive, *languor* and debility from the outset, with *headache*, pain in the *back*, also at times with gastric symptoms, seldom vomiting. The disease may not reach a higher degree, but terminate in from five to fourteen days in recovery; but there may take place from about the fourth to the sixth day, a sudden rise of fever, with a rapid spread of the false membrane in the fauces, when the disease has assumed one of

Its *severer forms*, which some writers have designated as **Croupous diphtheria**. In some cases this grave character shows from the beginning, by the greater intensity of the symptoms above described. The false membrane rapidly gains in thickness and extent, spreading either upward through the pharynx into the

nasal cavities, affecting the Eustachian tubes or the lachrymal ducts, or even the conjunctivæ, or downwards into the larynx, trachea and bronchi, or through the œsophagus into the stomach. Its color gradually turns to a dark brown or even blackish hue, in consequence of hæmorrhage underneath and decomposition of its substance with a corresponding terrible stench. The cervical and submaxillary glands swell to a still greater extent; the urine becomes scanty, dark-colored and rich in salts and shows in at least one-half, if not in more cases, signs of albuminuria in different degrees, often, though not always, nearly proportionate to the intensity of the disease. If the morbid process descends to the stomach, its functions become disturbed, there is loss of appetite, nausea, at times vomiting, and oftener constipation than diarrhœa. The affection of the heart ordinarily does not become apparent until at a later period, when there is not a trace left of diphtheritic appearance in the throat. But the patient remains weak, pale, without appetite, has frequent nausea and vomits all he eats. This symptom, whether it is derived directly from a diphtheritic condition of the stomach or by a mere reflex action from the brain, is, as far as my experience goes, always a very ominous sign; the patient usually dies with paralysis of the heart.

The *septic* or *gangrenous* forms of diptheria are especially characterized by extensive disorganization of the tissues, by capillary hæmorrhages on the surface of the mucous membrane and general blood-poisoning. One series of these malignant cases is developed from the croupous form, while others, a less frequent series, begin to be gangrenous from the onset, especially in malignant epidemics. Its phases follow each other in quick succession. The false membranes form on a livid œdematous mucous membrane, and soon undergo ichorous disorganization; the discharges from the mouth and nose become stinking and corroding; the cervical and submaxillary glands swell enormously, and there is œdema of the surrounding connective tissue. The face of the patient becomes bloated, pale, wax-like; his pulse small, weak, irregular and sometimes remarkably slow; the temperature is occasionally high, as much as 107¼° F., but usually it is diminished. Not unfrequently death is preceded for a few minutes by convulsions, or it instantly follows the sudden raising of the patient; sometimes the evidences of collapse continue for several days.

Diphtheria is often found in connection with Scarlatina, when

it may set in during the prodromal stage, sometimes during the height of the exanthem, less frequently after its disappearance, or even not till the end of the second week of the disease. It exhibits the same three forms as described above. It also has been found secondarily in typhoid fever, pyæmia, puerperal fever, erysipelas, whooping-cough, measles, and in chronic diseases, such as: tuberculosis of the lungs, extensive pleural exudations, chronic diseases of the kidneys (Bright's disease, so-called second and third stages), chronic suppurative inflammations of the joints, and chronic diseases of the liver, especially in topers.

As SEQUELÆ, we must mention especially different forms of *paralyses*, which may occur after any of the forms of diphtheria. "They appear most commonly two weeks, sometimes one week, occasionally three or four weeks, after the healing of the local processes, and in some cases not until after convalescence. They most frequently affect the soft palate and consist in paralysis of both motion and sensation; less often they affect the extremities in like manner, with or without the paralysis of the soft palate; sometimes they are all affected at the same time, or one after the other; preferably the lower extremities only; sometimes the sphincters also. Paralysis of the muscles of the eyes and of the larynx is more rare. Not unfrequently there are analogous conditions of the higher organs: either alone, or at the same time with the paralysis mentioned, most frequently of the organs of vision (presbyopia, myopia, even total blindness), more rarely of the organs of hearing, smell and taste. Sometimes there is impotence. After a continuance of the paralysis for weeks or for months, complete recovery usually takes place—death but seldom." (Wagner.) According to the results of minute investigations, these functional disturbances in the different muscles must be attributed partly to morbid alterations in the muscles themselves (fatty degeneration), and partly to diseased conditions of the brain and spinal cord (see above).

The DIAGNOSIS of diphtheria is ordinarily not difficult, especially not in epidemics. But its *mild* forms might be mistaken for a catarrhal angina—compare the respective chapter—, were it not for the general symptoms and the peculiar appearance of the diphtheritic exudation, which differs essentially from a mere secretion of catarrhal angina, forced out of the follicles as a yellowish, sticky mass which easily may be wiped off by a brush, or from follicular erosions which show a distinct loss of sub-

stance at their borders, or from aphthæ which commence as small vesicles and gradually form ulcers. The severer forms can hardly be confounded with other diseases. Simple *croup* has no affections of the glands and kidneys, and *scarlatina*—even if diphtheria should be accompanied, as it happens in rare cases, by a slight erythema of the neck and breast—has no formation of false membranes in the fauces.

The PROGNOSIS of diphtheria, generally speaking, under homœopathic treatment, is not bad. Of course, we meet difficult cases, even fatal ones; but the percentage of loss is small. Its danger lies principally in the possibility of its extension to the larynx, and its septic poisoning.

THERAPEUTIC HINTS.—In looking over the homœopathic literature on this subject, leaving alone the allopathic, one feels almost tempted to exclaim: "Lord, hold on with thy blessings!" as the parson said, when he received the news that a son had been born to him, and a little while after, a daughter, and still a little while later, another son! Nevertheless they all were welcome, and each one showed its own individual character, and got its own share of parental love.

There *is no specific remedy* for diphtheria nor for any other so-called disease.

Acids, especially organic acids, have proved themselves in various degrees capable of dissolving the diphtheritic membrane.

Acet. ac. has not been given, to my knowledge, in diphtheria; but it has been found by Dr. Krebs, in Hamburg, Pa., very effective in croup. I can confirm his observations, especially when there is a bright redness of the face attending it.

Carb. ac. has been the sheet-anker of Dr. Davidson, though it has by no means proved a universal remedy for diphtheria. Its indications are: low fever with great prostration, weak pulse and paleness of face; absence of severe inflammation and pain in the throat, but abundant formation of false membranes, with great danger of septic poisoning and great fœtor oris.

Citr. ac. is recommended by Buchner, and thought better than **Lact. ac.** This latter has many throat symptoms, *e. g.*, dryness and constriction similar to Laches.; difficulty of swallowing solids, etc.

Mur. ac. has proved curatively when there were: bleeding from the nose, the blood dark and putrid; sordes on the teeth; sore

and scabby condition of the lips; putrid smell from the mouth; great general prostration; typhoid condition.

Nitr. ac., ulcers in the mouth; great pain on swallowing; excessive salivation; corroding discharge from the nose; fœtor oris; great uneasiness; high fever; intermitting pulse. After overdosing with mercury; syphilitic taint.

Salycil. ac., when there is little or no fever, but great weakness, difficult deglutition, much inflammation, and the exudate soft. First centesimal dilution, a few drops in half a glass of water, one teaspoonful every half hour or hour, and the same as a gargle. (Oehme.)

Sulph. ac. Oehme gives the following resumé: tonsils bright red and swollen; exudate thick, grayish, or yellowish-white, sticky tenacious; swallowing very difficult, liquids run out of the nose; swallowing almost impossible; breathing difficult on account of the accumulation of the exudate; speech thick, indistinct, very difficult; violent salivation; excessive fœtor oris; pulse frequently small, weak; apathy; somnolence. Excessive paleness and weakness.

Ailanth., especially in scarlatinal diphtheria with livid and swollen throat, and tonsils studded with numerous deep, angry-looking ulcerations.

Alcohol, diluted with water, recommended by Von Grauvogl as a gargle and applied by some in the form of a spray, has proved to be not the homœopathic remedy, but a most beneficient adjuvant in the treatment of diphtheria, because of its antiseptic properties, its stimulating effects upon the system and its non-interference with the homœopathic remedy given at the time. Instead of alcohol, brandy, whisky or rum may be used:

Amm. carb., obstruction of the nose; the moment he falls asleep he is aroused by the want of breath.

Amm. caust., 15 drops to a glass of water, cured a case with croupous cough, which threatened suffocation every moment. The lower part of the pharynx covered with a white exudate, extending down as far as could be seen. Patient in the greatest agony, frequently jumping out of bed and gasping for breath. (Spranger.) Single observation.

Apis mel., great debility from the beginning; puffiness around the eyes and œdematous swelling of face and neck; bright red color, and puffy, glossy and varnished appearance of fauces; uvula œdematous; stinging, burning pain in throat and dryness;

pain in the ears when swallowing; difficult swallowing on account of irritation of the epiglottis; sensation as of a rapid swelling of the lining membrane of the air-passages; hoarse cough; intense sensation of suffocation, could bear nothing about the throat; labored inspiration as in croup; headache; painful, or suppressed micturition; albuminous urine; pain in shoulders and neck, darting, cutting, in periodical spells; itchy, stinging eruption on the skin; sensation of weakness in the larynx; weakness of feet and hands, even paralysis; marked prostration and depression; nervous restlessness; high fever. Combination with scarlatina.

Arnica helps us in two conditions: 1. Where we meet rapid decline of strength, small and rapid pulse after a too rapid course of the inflammatory fever (but the presence of Bright's disease may cause Arsen. to be preferable). 2. After the infiltration had run its course, with tendency to necrotic ichorrhæmia, in lymphatic persons subject to torpidity, with noisy deglutition, great debility, adynamia, excessive depression, and deep-seated coaffection of the whole nervous system and the brain, in short, absence of all erethismus after expulsion of the exudations. Physiological symptoms are: General loss of strength; heaviness and paresis of the right side, in contradistinction to Lachesis, and of the shoulder; foul breath; burning in the throat, with anguish from internal heat; stitching posteriorily, as if some hard substance were in the pharynx; noisy and difficult deglutition, prevented by a kind of vomiturition, as if the food could not pass downwards. (Buchner.)

Arsen., in the later stages of the disease when there are: great restlessness, wants bed and room frequently changed; constant desire for cold drink, but taking little at a time, or better from drinking hot water; all symptoms worse after midnight. Albuminuria; paralysis of lower extremities.

Ars. jod., cured a case with asthmatic and croupy symptoms; hoarse cough; diphtheritic deposit covering mouth from fauces to outer lips, also external auditory canal; pulse weak and slow; great prostration; bad odor from patient. (F. Bigelow.)

Arum. triph., burning in the throat; constant inclination to clear the throat of collections of mucus which increases the burning and rawness; hæmorrhage from nose (M. Preston); the discharges from the nose and mouth are very acrid, and excoriate the skin wherever they come in contact with it; the lips are sore and swollen, and the skin peels off; the patient continually picks

at his lips and nose, making them bleed. Drink is refused on account of the great soreness of the mouth; the breath is very fetid, and the cavity of the mouth covered with diphtheritic deposits and ulcers; great restlessness, the patient crying and throwing himself about into all sorts of positions. (Lippe.)

Baptis., characterized by absence of pain, although the fauces and posterior nares are œdematously swollen with constant inclination to swallow. Stupefaction and drowsiness; mind wandering; low muttering. Oppressed breathing unto suffocation on account of pulmonary congestion. Rising in bed does not relieve; the patient must go to the window for fresh air. Stools dark and blood-streaked.

Bellad., in sudden attacks with fear of choking to death; great dryness and redness of the throat and great pain on swallowing. External swelling of the neck. High fever; great drowsiness with inability to fall asleep; starting in sleep. Suitable only at the beginning.

Bromium, Ozanan's favorite remedy. Is indicated by a hoarse, croupy cough with rattling in the larynx.

Bryon., the patient is quickly prostrated, shuns all motion, and complains, on moving or when being moved, of pain everywhere; white tongue; feeling of dryness in the mouth without thirst, or else desire for large quantities of water. Only in the beginning.

Calc. chlor., recommended and used by Dr. C. Neidhard.

Canthar., burning and scraping in the throat with bloody expectoration; too copious, or scanty and difficult urination; the urine contains casts of the uriniferous tubuli; also albumen; extreme prostration; sinking, death-like turns; irritable rash upon the skin or showing through the epidermis.

Gelsem., local tingling of parts during the fever; incipient paralysis or anæsthesia; defective or impaired vision; objects appear a long way off, are seen double or inverted.

Ignat. The honor of having first introduced this remedy for the treatment of diphtheria belongs to Dr. Boskowitz, of Brooklyn. I have given it for several years with the most marked effects, and so have several of my colleagues to whom I have recommended it. During an epidemic in Lehigh county, Pa., Dr. Wm. C. J. Slough did not lose a single case after he commenced using Ignat., 200th trit., persistently a teaspoonful every hour or two, in spite of delirium, hæmorrhage or other untoward symptoms. That epidemic was characterized by the following symp-

toms: "green vomiting; putrid throat, seldom painful (the painful cases were less likely to prove fatal); greenish-yellow patches; delirium; headache; green stools; suppression of urine; sometimes chilliness; sometimes high fever." I must confess I have not yet found any particular indications for this remedy; it acted well in all cases. Whether this be attributable to the genius epidemicus in this region of the globe is possible. If so, it will lose its efficiency when that changes. But there is no doubt that the provings of this drug present numerous hints for its application.

Iodium, probably useful like Bromium in affections of the larynx.

Kali bichr., the discharge from the nose is tough and stringy; pain in left ear on swallowing; swelling of the parotid glands; croupy cough; measle-like eruption; red, raw, shining tongue; or also covered with a thick yellow coating; deep-seated ulceration in the fauces; mucus streaked with blood.

Kali mur., sufficient in most cases; but when soft parts of the fauces are much swollen: **Calc. sulph.** (Schüssler).

Kali phosph., in malignant cases; offensive odor. (Schüssler).

Kreosot., in malignant cases confined to the fauces with terrible fœtor oris.

Lac can. The following proving by Dr. H. W. Taylor, is very suggestive: "Rolled and tossed about all night; could not sleep on account of uncontrollable feeling of restlessness; necessity to turn and shift about constantly. Palms of hands and soles of feet abnormally hot; sighing frequently; utter inability to lie half a minute in one position. Throat feels dry, husky, as if scalded by hot fluid. Dark red, angry streaks of capillaries in the fauces; the whole fauces dark red and tumid; round gray spot where the redness first began. Viscidity of saliva." Dr. Reissig, of New York, first used this remedy without divulging it. Dr. Dunham drew the secret out of him, and since then Dr. Swan and different other physicians of good repute have published very severe cases cured by it. I consider the above proving as furnishing the best indications for its application. Dr. C. Lippe gives the following characteristic indications: "The ulcers go from one side to the other and back again; the ulceration has a glistening, shining appearance (**Apis**); the swelling of the glands changes sides and is painful to the touch, and the nasal discharge excoriates the nostrils and upper lip (**Arum. triph.**). These characteristic ulcers, shining and glistening, may be found in any part of the body."

Laches., when the membrane develops first on the left and then on the right side; when there is more subjective suffering than the objective signs would warrant to suppose; when all the symptoms are worse after sleep. Tendency towards the larynx with croupy cough and intolerance of any external pressure on the throat; badly smelling stools, even if formed; dark, scanty urine of strong odor; albuminous urine; purplish eruption on the body; delirium, which changes rapidly from one subject to another; somnolency; hard aching all over, which makes the patient constantly change his position.

Lycop., the color of the fauces is of a brownish redness, the exudate commences on the right side and the pain is worse from swallowing *warm* drinks; the nose is stopped up, and the patient cannot breathe with his mouth shut; he keeps his mouth constantly open, slightly projecting his tongue, which gives him a silly expression; the nostrils are spasmodically dilated with every inspiration; on awakening out of a short nap, he is very cross, kicks and behaves naughty, or jumps up in bed, stares about and knows nobody, seemingly dreaming with open eyes; frequent jerking of the lower limbs, mostly with a groan, awake or slumbering; great fear of being left alone; cannot bear to be covered.

Merc. cyan.—This remedy was first recommended by Dr. Beck to Von Villers in a hopeless case of diphtheria, because of its having produced in five persons poisoned with this drug, gangrene of the velum palatinum and fauces. It proved successful. Ever since then Dr. Von Villers has used it in several epidemics under different latitudes with uniform success; higher dilutions operated better than lower. He began with the 6th and arrived at the 30th cent. Several physicians who never saw any result from it, gave the 2d or 3d trit. or dil. When an epidemic of diphtheritis prevails, he administers it in every case of inflammation of throat. Lately (*Allgemeine Hom. Ztg.*, vol. 99, p. 43, 1879) Dr. Grubenmann in St. Gallen confirms Dr. Von Villers' observations by stating that in a late epidemic, he cured with this remedy in its 15th to 30th cent. dil. 50 cases, excluding all the light catarrhal forms at that time, without ever seeing the disease spreading to the larynx or showing any paralytic sequelæ. It has also cured cases where the disease had already invaded the larynx.

Merc. bin., *left* tonsil affected; velum elongated; gums and tongue more or less swollen and sensitive; constant collection of saliva and mucus in the mouth necessitates swallowing; swallowing of fluids or solids is painful.

Merc. prot., worse on *right* side; tongue coated thick on back part, of a buff-yellow color; worse from *warm* drinks.

Naja trip., suffocating spells on lying down, particularly when in bed; must be taken up and held erect in order to procure easy respiration; suffocative spells of cough after every sleep, however short. The cough is deep, hoarse; respiration wheezing, rasping, very tight and difficult, ameliorated during the morning from daylight to 11 A.M.; retention of urine; yellow watery stools. (M. Preston.)

Natr. mur., swelling of the submaxillary glands and lymphatics; map tongue; burning in throat; after application of caustics, especially of nitrate of silver.

Nux vom., feels better after a little sleep. (P. P. Wells.)

Phytol., in cold weather, at the beginning with dryness and soreness of the throat, great headache, violent aching in the back and limbs; great prostration; cannot stand; gets faint and dizzy when rising up in bed.

Plumb. met. and **jod.**, have been recommended and successfully used by Schüssler; where there is inclination of the exudate to mortify and slough off; also in implication of the larynx. This was *before* the introduction of his tissue-remedies.

Rhus tox., when the child is restless, wants to be carried about, wakes up every now and then complaining of pain in the throat; when a bloody saliva runs out of the mouth during sleep; when the parotid glands are greatly swollen; when there are transparent, jelly-like discharges from the bowels at stool or afterwards.

Sulphur, large yellowish deposit all around the posterior wall of the pharynx, all posterior to the uvula and isthmus faucium. Quite lately, pulverized sulphur, blown at the diseased surface, has been lauded as a universal cure for diphtheria.

Post-diphtheritic paralysis.

Apis, numbness of the extremities.

Arg. met., anæsthesia of the roof of the mouth and fauces.

Arsen., paralysis of the lower extremities.

Camphora, paralysis of the lungs.

Caustic., paralysis of one arm and the muscles of deglutition.

Gelsem., local tingling and incipient paralysis or anæsthesia; defective or impaired vision.

Kali brom., anæsthesia of fauces.

Nux vom., hemiplegia, left side.

Phosphor., numbness of fingers and feet, with great weakness.

Secale, numbness of the extremities; paralysis of some parts; painful tingling (like crawling of ants) on the tongue.

Tart. emet., paralysis of the lungs.

Besides, compare: Arnica, Baryt., Coccul., Cuprum, Plumbum, Rhus tox., Stannum, Sulphur, Thuja, Zincum.

Noma, Gangrene of the Cheeks.

The first symptom of this malignant but rare disease is a small blister, situated in the middle of the cheek, or toward the corner of the mouth on the inside of the cheek. It is filled with a pale-reddish or turbid grayish or brownish fluid. It bursts so soon that its formation is mostly overlooked, and appears afterwards as a superficial ulcer with an unclean basis, soon assuming a gangrenous character. Simultaneously with this blister, underneath it, a small lump is found, which may be felt even outside on the cheek, which consists of infiltrated cellular and adipose tissue. Now the gangrenous destruction goes on rapidly, and on the outside appears an œdematous swelling of the diseased cheek, often shining fatty or oily, or appearing livid, pale or marbled. By and by, there is also formed outside, mostly on the middle of the cheek, an inflamed spot or blister upon a hard basis, which soon covers itself with a dark crust. This crust being removed, gangrenous ulceration appears under it, like that on the inside of the cheek, which spreads with the same rapidity, destroying in a short time the greater part of the affected side of the face.

The general and concomitant symptoms seem at first to indicate nothing alarming. Generally the glands of the neck swell, and the face has a pale, cachectic aspect. Soon, however, there is a general sinking of strength, diarrhœa sets in, and death may ensue from exhaustion, before the gangrenous destruction extends over the whole cheek.

This disease is mostly found in childhood, and always in sickly children, or after scarlet fever, measles, typhus, and sometimes after small-pox. Adults are very seldom attacked by it, and then it appears only after typhus or puerperal fever, and especially after the abuse of mercury.

THERAPEUTIC HINTS.—The main remedies recommended are, Arsen., Helleb., Secale, China, Carb. veg.

NECK.

General Observations.

Ocular inspection of the neck externally, as a whole, presents various noticeable features.

A short and *thick neck*, in consequence of hypertrophy of its muscles, is found in emphysema of the lungs; and

A long, thin neck mostly accompanies tuberculosis.

A spasmodic contraction of the neck backwards denotes meningitis, with exudation on the base of the brain.

The external jugular vein puffs out in the triangular space, which is called the interstitium intersterno-cleido-mastoideale, in all cases where the free circulation of the blood through the thoracic cavity is interfered with, as in diseases of the heart, and in consequence of continued violent coughing, screaming, singing, and the like. A pulsation of this vein is observed in insufficiency of the tricuspid valve.

The *carotid artery* is seen to *pulsate more strongly* in feverish conditions, and where there is obstruction in the circulation within the brain; *its jumping pulsation* is a sign of insufficiency of the valves of the aorta.

The *acromial and supra-sternal* regions *sink in* when the upper parts of the lungs shrink; and

These regions become inflated during inspiration or expiration, when emphysema or caverns exist in the upper part of the lungs; also, during bronchitis capillaris of infants.

Swellings of the neck are of various nature:

They are *emphysematous* when, in consequence of internal or external injuries of the larynx or trachea, air penetrates into the subcutaneous cellular tissue; or when, in consequence of a rupture or laceration of the lungs, the air is forced through the mediastinum into the cellular tissue of the neck.

They are *œdematous* in case of general dropsy, or when, by tubercular or scirrhous tumefaction of the lymphatic glands, the vena jugularis or anonyma becomes compressed; this causes at the same time an œdema of the face, or of the arm.

There is *a swelling of the lymphatic glands*, either by infiltration with tubercular or scirrhous masses, or by becoming involved; secondarily, in inflammatory processes of the mouth, throat, face, or scalp, of which we have spoken.

Parotitis or *mumps* appears on the upper part of the neck in front and below the ear, while

Bronchocele, Struma or Goitre,

Which is an enlargement of the thyroid gland, appears lower, sometimes on one, sometimes on both sides of the neck. Simple enlargement or hypertrophy of this gland is, according to Porta, found only in children and young persons, while in older persons *struma* is always a degeneration of this gland, consisting in formations of cysts, which contain a thick, gummy, jelly-like substance, of a yellow or brownish color, and which are known under the name of *colloids*. According to Schuh these colloids are either interspersed between the substance of the gland, or they form separate round or oval appendages upon the gland, without involving the gland itself into the morbid process.

The struma of new-born children consists, as above mentioned, in a simple enlargement of either the entire gland, or of one of its lobes, and interferes, sometimes seriously, by its pressure upon the trachea, with the child's respiration. In severe cases it may produce death in a day or two, or even a few hours after birth. This is especially the case, should the swelling extend under the sternum, or the sternal portion of the clavicle, or in case the muscles underneath the hyoid bone prevent its extension exteriorly.

In regard to the *combination of struma with tuberculosis* we may say that, where *struma* is developed, there tubercular affections of the lungs may be found, but they do not reach the stage *of softening* or *phthisis*, so that struma excludes tubercular phthisis.

Basedow's or Grave's disease has been treated of, under the chapter on the eyes.

THERAPEUTIC HINTS.—Bellad., heat and rush of blood to the head; pain in swallowing; gland painful to touch.

Bromium, in juvenile subjects, with light hair, blue eyes, fair skin.

Calc. carb., in scrofulous persons, worse towards new moon.

Egg shell, divested of its inner coating, finely triturated, has been used successfully.

Iodium, inveterate cases; the harder they feel, and the more other symptoms are wanting, the more Iodium is indicated; dark hair, dark eyes, dark skin.

Natr. carb., pressing pain; round, hard swelling on the upper right part of the gland.

Natr. mur., and also **Natr. sulph.** have been given with success.

Spongia is recommended by Hahnemann for goitre in persons who live in valleys. Besides compare: Ambra, Amm. carb., Badiag., Calc. fluor., Calc. jod., Caustic., Hepar, Kali jod., Lycop., Sulphur.

ŒSOPHAGUS.

The lower part of the pharynx narrows back of the laryngeal entrance into a tube through which the food in the act of swallowing is carried into the stomach. This tube is called œsophagus. Its inner wall lies entirely out of the reach of ocular inspection, and we must infer from other symptoms what its conditions are. The introduction of the probe, or bougie, teaches by mediate palpation merely, whether the passage is open or closed, and if closed, at what point; and if it brings up in its fenestra some morbid products encountered during its passage, it may also aid us in our diagnosis. Auscultation, first practiced by Hamburger, has thus far had no great practical results.

Œsophagitis, Dysphagia Inflammatoria.

The mucous membrane of the œsophagus, although a continuation of the mucous lining of the fauces, is little disposed to inflammation, because of its thick epithelial covering. Still inflammation may set in even here from *thermal* influences (taking cold), from *mechanical* irritation (by the lodgment of foreign bodies), and from *chemical* causes (the destructive action of corrosive substances swallowed by accident or design). It may also be induced by spreading from continuous parts of its mucous membrane (such as of the pharynx or the stomach), or from in-

flamed parts outside of it, such as the vertebræ, the mediastinal connective tissue, or the lymphatic glands. And lastly it is found sometimes in cholera, typhus, pyæmia, variola, and scarlatina. All these different forms of inflammation may produce ulcers of the œsophagus; the catarrhal form, although the most favorable in this respect, may in its protracted chronic form produce dilatation of this organ. Worse are the forms produced by corrosion, scalding, foreign bodies, etc., especially if they extend to the deeper layers, when danger of *stricture* from cicatricial contraction of the ulcers is always at hand. One of the most constant symptoms of inflammation of the œsophagus in any of its forms is painful deglutition or even entire impossibility of swallowing with regurgitation of food or drink, hence the name **Disphagia inflammatoria.**

THERAPEUTIC HINTS.—Acon., violent pain in the middle of the chest through into the back, worse from motion. When swallowing, it feels as if the food remained lodged in the region of the heart; lying on back impossible. After mechanical injury.

Arg. nitr., after burning with caustic ammonia; fauces red and swollen; pain under the manubrium sterni; face red and pupils contracted.

Arnica, after mechanical injury.

Arsen., cramp in œsophagus; burning when swallowing; food ejected as soon as it reaches the region of larynx. Chronic form with burning soreness behind lower end of sternum, worse when swallowing food; can't bear closure of dress.

Baptis., inability to swallow anything but liquids; great aversion to the open air. Oesophagus feels constricted from above down to stomach.

Bellad., pressing pain, like contraction, and a feeling as though a foreign body had lodged fast in the œsophagus.

Canthar., if caused by a burn.

Kali bichr., burning in the entire œsophagus; solid food is painful and difficult to swallow, leaving a sensation as though something remained there.

Kali carb., liquids, still less solids, do not descend further than half way of the œsophagus, with pressure, stinging and burning in the middle of the chest and opposite vertebræ; gulping and coughing up of watery phlegm; chilliness, dry mouth, nausea.

Laches., an attempt to swallow solids causes a feeling as though something had gone the wrong way, bringing on violent gagging.

Mezer., violent burning and soreness in the upper half of the œsophagus; deglutition painful and difficult, especially after the abuse of mercury.

Natr. mur., only fluids can be swallowed; solid food reaches only a certain place, whence it is ejected with fearful gagging and suffocation; hawking up of phlegm in the morning; obstinate constipation.

Nitr. ac., in syphilitic persons.

Phosphor., inability of swallowing nourishment; weak and empty feeling across the abdomen with occasional shooting pain in that region; sensation of heat extending up the back; great nervous irritability.

Plumbum, fluids can be swallowed without difficulty; solids come back into the mouth again; some hours after eating, burning in stomach and œsophagus; constipation; prostration; emaciation.

Rhus tox., if caused by corrosive substances.

Stramon., constriction and spasm of the muscles of the throat on each attempt to swallow; also paralysis of the muscles of the pharynx.

Stenosis Œsophagi, Narrowing of the Œsophagus.

This state of things may be *congenital* (a very rare occurrence) or the consequence of *compression* from morbid changes of neighboring organs, such as the glands of the neck and mediastinum, or large strumous masses when they extend far back so as to surround the tube; or be caused by *foreign bodies* of various kinds which in the act of swallowing have stuck fast, or have gradually grown there, to which latter class belong all fungoid, polypous and carcinomous growths; or it may be the consequence of previous inflammation and its consequent contracting cicatrizes, causing **True stricture** of the œsophagus; or it is a mere transient contraction of the muscular layer of the œsophagus, chiefly observed in hysterical or hypochondriacal patients, constituting **Spastic stenosis.** In all these cases the characteristic symptom is difficulty of deglutition. Where the occlusion forms gradually, the patient at first merely feels some obstruction to the free passage of the food, especially if solid, which, however, is overcome

by drinking a little water or other fluid; gradually, however, when the stricture becomes greater, the food does not go down by these means and it is either kept in that region of the œsophagus until it gradually works its way through the narrowed space, or it is ejected. The higher the stricture, the sooner will regurgitation follow.

THERAPEUTIC HINTS.—Bellad., when too large a morsel or a bone incites contraction of the œsophagus and holds it fast, Bellad., generally relieves this spasm and lets the swallowed body down.

Cicuta, when, after swallowing a sharp piece of bone, the œsophagus closes and there is danger of suffocation.

Gelsem., warm fluids, spirituous fluids can partially be swallowed; cold drinks come up immediately. (Dr. Erwein).

Hydrophob., periodical spasms of the œsophagus, with constant painful urging to swallow, but impossibility of doing it; abhorrence of fluids, especially of water; burning, stinging in the throat; cough; gagging; difficult and incorrect speech.

Hyosc., spasmodic contraction after a previous injury of the œsophagus; solid and warm food can be swallowed best; fluids cause spasms in the throat, stop respiration and talking; hiccough, nausea, spasmodic cough, and stiffness of the muscles of the neck.

Naja trip., spasmodic contraction of the œsophagus.

Ver. alb., spasmodic contraction with suffocation.

Compare also the remedies under the foregoing chapter.

Dilatation of the Œsophagus.

Where there is stricture, the parts of the œsophagus above sometimes become dilated from the lodgement of food in that locality; but not always, because the muscular layers eject again what cannot pass down. But when these muscles lose their contractile power, a dilatation of the tube above the stricture is unavoidable. It is greatest just about and above the stenosis and diminishes as it ascends. These dilatations of the œsophagus have been called **Stagnation aktesiæ.**

Then again dilatations of the œsophagus have been observed *without any stenosis*, either of the whole canal or of only a portion of the same; they are usually widest near the middle of the

tube. The wall of the œsophagus is in some cases thinned, in others thickened by muscular hypertrophy and the course of the tube is crooked, its lining membrane at times affected with erosions and ulcers, and its inner space filled with a brownish, pulpy mass, or small particles of food. "The greater number of these patients had suffered for many years from severe dysphagia, vomiting, regurgitation of food shortly after eating, and repeatedly from actual rumination." (Zenker and Von Ziemssen). Of their remote cause nothing is known.

A last variety of œsophageal dilatation are the **Diverticula**, which consist of protrusions or bulgings of a limited portion of the œsophageal wall, forming blind appendages to the normal canal. They are of two kinds: first, such which arise from pressure within the canal outward (**Pressure diverticula**), and secondly, such in which the wall of the œsophagus is pulled out by something exercising traction from without (**Traction diverticula**). The first are very rare and almost exclusively situated at the lowest part of the pharynx, just at the upper boundary of the œsophagus, and on the posterior wall, sometimes exactly in the median line, and sometimes somewhat laterally. Here the arrangement of the muscular fibres greatly favors a separation between their bundles, as they run in parallel lines in a very thin layer, transversely, from one side to the other, without being interlaced by oblique as above, or by longitudinal fibres as below this spot. Here foreign bodies are easily lodged, the continuous pressure from swallowing does satisfactorily explain the widening out of this portion of the œsophagus. It is an affection of advanced age, and causes great difficulty in swallowing, regurgitation of food, and the consequent symptoms of starvation.

The **Traction diverticula** are of more frequent occurrence and always found at the anterior wall of the œsophagus, mostly at a point corresponding to the biforcation of the trachea, or else close by, above or below it, but sometimes also higher up or lower down. They are mostly funnel-shaped and of only a moderate depth. Their outside apex is grown to a firm, contracted tissue by which traction is exercised as from a cicatrice. The starting point has been an inflammatory swelling of the parts immediately adjoining the œsophagus, leading at first to adhesion with a limited portion of the œsophageal wall and afterwards by shrinkage to a pulling out of that portion of the œsophagus. It is in fact a disease of the tracheal and bronchial glands, especially those at the

bifurcation, incidental even to childhood. They do not cause dysphagia, but their ulceration and perforation at the apex, which may be set up by irritating substances, pieces of bones, etc., collected therein, causes a destructive process in the mediastinum and in its further progress may perforate the bronchi, and cause bronchitis, gangrene in the lungs, ichorous pleuritis, pericarditis or even perforation of arterial trunks.

The existence of these traction diverticula is in most cases not even suspected during life. However a frequent detention of food at a fixed spot, pretty low down, particularly the slight delay of granular food, like barley or rice, should at least direct the attention of the careful practitioner in that direction, notwithstanding such symptoms may have several other explanations, and be sufficient reason to enjoin upon the patient the use of soft food and the habit of drinking after eating in order to wash out any remains of food from the diverticulum.

THERAPEUTIC HINTS.—As dilatations are frequently associated with loss of muscular contractile power, the following remedies which have proved beneficial in paralysis of the throat, should be consulted: Arsen., Baryt. carb., Caustic., Conium, Calc. carb., Hepar, Iodium, Mur. ac., Stramon., Ver. alb.

LARYNX AND TRACHEA.

Auscultation.

On putting the ear to the stethoscope, which must be evenly placed upon the larynx, we hear the rushing in and out of the air during the act of respiration much louder than on any other place. It may be imitated by blowing with compressed lips through the bore of the stethoscope, and is called *laryngeal* or *tracheal respiration*, for at the trachea too, it is heard in the same degree.

Some authors lay great stress upon the necessity of auscultating these organs. I cannot attach such great importance to it, either diagnostically, or still less therapeutically. The only benefit afforded by auscultation in diseases of the larynx and trachea, properly so called, is the *possibility of localizing by it the source of obstruction*, if there be any; but whether that obstruction arise "from inflammatory engorgement of the lining membrane, from

solid effusion upon the internal surface, or from fluid effusion beneath it, or if in consequence of preceding ulceration any contraction exist, either in the rima glottidis, or in the course of the trachea, which gives rise to constriction of the tube, and thereby impedes the free ingress and egress of air, or whether a foreign body, fixed in the œsophagus and pressing upon the trachea, or situated in the trunk itself of the air-passages, or a tumor, or a mere spasmodic action, be the cause of this constriction —auscultation telleth not. In each of these cases the noise is usually sufficiently obvious, and the evidence of obstruction is sufficiently clear, independently of auscultation. By the stethoscope we are enabled merely to say that obstruction exists and to indicate its seat; but the nature of that obstruction is not revealed by it." (H. M. Hughes.)

Inspection, Laryngoscopy, is of much greater importance. We need for its execution a *throat mirror* and *suitable illumination.* The throat mirror is round and consists of white glass, thoroughly polished and well silvered, and strongly fastened at an angle of 45° to a strong rod, one-sixteenth of an inch thick and six inches long, which terminates in a suitable handle, five or six inches long. The size of the mirror must be suited to the capacity of the patient's throat, from four-tenths of an inch to one and a quarter inches in diameter is its boundary; the intermediate sizes, say seven-eighths of an inch in diameter, are probably the most convenient for general use.

The illumination may be procured from the direct rays of the sun, from diffused daylight, or from artificial light (oil lamp, candle or gaslight).

The direct rays of the sun and diffused daylight, the best of which comes from a window facing the north, thus being reflected from the northern sky (Dr. Woodvine), need no reflectors. With artificial light, reflectors are necessary. They are either held with one hand, which scarcely ever is practiced on account of its inconvenience, or they are fastened upon the forehead of the examiner (compare the examination of the nose), or they are screwed, movable in every direction, on the handle of the throat mirror (an invention of Dr. Elsberg, Clinical Professor of Diseases of the Throat in the University of New York), or they are added in different ways to the illuminating apparatus, generally complicated and expensive contrivances.

Of all these means, Dr. Elsberg's seems the simplest and the

one most easily applied. His directions for the employment of this apparatus, which he calls the pocket laryngoscope, are the following:

"I will first suppose the examination is to be made in the day time, in the absence of direct sunlight. Seat the patient with his back to the window, let him open his mouth and protrude his tongue by a strong effort of his will, and let him hold the tongue out with his index-finger and thumb of his right hand, covered by a handkerchief. As I want to give minute practical directions, I must say here that a great deal of awkwardness is prevented by placing the handkerchief between the middle and index-fingers, turning it over so as to cover the index-finger and thumb spread far apart, and closing the little and ring finger upon the handkerchief; the thumb and index-finger then taking hold of the tip of the tongue, the thumb should rest against the chin, and by an outward and downward movement arch out the tongue. When the patient does not succeed in properly holding out his tongue, the examiner must hold it with his left hand. The little mirror is warmed until the film of condensation which settles upon it passes off; its temperature may be ascertained by bringing its metallic back into contact with the examiner's cheek or the back of his hand; it is then, without touching the tongue, introduced into the mouth, taking the uvula upon its back. Keeping the parts well illuminated by means of the reflector, on depressing the handle a little, the epiglottis will be seen in the mirror; and getting the patient to breathe deeply, say "a," laugh "hah, hah, hah!" as heartily as possible, etc., and very slightly moving the handle, the various parts of the interior of the larynx and neighboring organs will be brought into view.

"When artificial light has to be employed, the patient should sit so that it is a little back of him, and on his right side. In all other respects the mode of examination is unchanged. The pocket laryngoscope may be used with sunlight, or diffuse daylight, or oil lamp, candle or gaslight; and in the latter case the ordinary high gas fixture answers the purpose almost as well as a drop light or stand. Ten minutes practice familiarizes any one with its use.

"For auto-laryngoscopy an extra looking-glass is necessary which, when the mouth can be illuminated by *direct* sun or artificial light, may be in the handle instead of the reflector; other-

wise, it must be placed in any convenient manner in front of the examiner."

It will be well to commence practicing this little art either on one's self or another healthy subject, in order not only to acquire the skill of introducing the throat-mirror and holding it in a suitable position for a full illumination of the larynx, but also on account of acquiring a thorough knowledge of the parts, their color and their movements when in a *healthy* condition; *abnormal* condition will then at once spring into notice.

Acute Catarrhal Laryngitis, Catarrh of the Mucous Lining of the Larynx.

It may not amount to more than a rosy injection of the posterior ends of the vocal cords and some of the parts adjoining; it may extend to the ventricular bands (false vocal cords), to the arytenoid cartilages, upon the epiglottis and into the trachea, causing swelling, redness and ecchymotic spots of these parts; it may even terminate in œdema of the larynx and hæmorrhagic extravasation upon its free surface, or hæmorrhagic infiltration of the mucous membrane and the submucous connective tissue. These different states naturally produce different symptoms of the disease. From a mere slight *huskiness* of voice the hoarseness may increase to aphonia, in consequence of the greater or less swelling of the vocal cords and the parts around them, and the innervation or alteration of the laryngeal muscles.

The *difficulty of breathing*, which in adults rarely attains to any great degree, may in children increase to gasping and struggling for breath, simulating croup, wherefore the name of **Pseudo-croup** has been adopted by most recent writers for this state of affairs. These attacks of stenosis are due partly to the relatively great amount of swelling of the mucous membrane in comparison with the narrowness of the true and false glottis, and partly to the secretion, which dries upon the parts during sleep and increases the obstruction. The child then rouses suddenly in the middle of the night with a harsh, croupy cough and distress for breath; the stridor, however, is solely inspiratory, and the expiration takes place noiselessly. After the secretion is liquified, these symptoms abate.

The *cough*, too, varies in its character. We observe paroxysmal, spasmodic attacks, resembling whooping-cough, followed by a

drawn inspiration, also cough of various sounds and timbre, or without tone, in consequence of the greater or less swelling of the vocal cords and their adjoinings. At first it always sounds dry but becomes looser as the *secretion* of the inflamed parts increases. In the beginning it is very scanty, clear and transparent, sometimes mixed with blood in the form of fine streaks, later it becomes more abundant and consistent, changing to yellow from the increased number of pus-cells.

There is also more or less *pain* in the larynx, a disagreeable feeling of dryness or irritation, as if from a foreign body. Its severity does not always correspond to the amount of the inflammation; the latter may be trifling and yet its annoyance great.

Difficulty in swallowing occurs only when the epiglottis and the posterior surfaces of the arytenoid cartilages and ary-epiglottidean folds are considerably implicated in the inflammation.

Such an acute attack lasts in some cases from five to nine days, in others weeks, and in still others it becomes chronic.

Its CAUSES are very numerous. A *predisposition* to it seems to exist in persons who perspire easily, who are weakly, cachectic, and who keep themselves too warmly clad, or too much housed up, etc.

Exciting causes are all *irritating agencies*, such as breathing of cold air, dust, acrid vapors, screaming, singing, etc.; *taking cold;* getting the feet cold; sudden exposure of the neck to cold air, etc.; *catarrhs, colds in the head*, influenza, pharyngitis after drinking strong drinks; persons get hoarse after debauchery, all showing a spreading from contiguous parts; and some *constitutional diseases*, as measles, exanthematic typhus, syphilis, and especially tuberculosis, which latter generally causes a constant disposition to "catch cold in the throat."

THERAPEUTIC HINTS.—Acon., in the beginning, after exposure to cold, west winds; fever with hot, dry skin, great restlessness and impatience. Waking up in the middle of the night with croupy cough and breathing, pain in the larynx and great anxiety. Also after straining the voice in singing.

Bellad., spasmodic, barking cough, waking suddenly about midnight; pain in larynx, headache, fever, drowsiness; sudden loss of voice.

Bromium, rough, scraping feeling in the throat, with oppression of breathing; husky, hoarse voice; croupy cough; fair skin.

Bryon., cough worse from motion, from entering a warm room, and with pain in pit of the stomach. From changes in the weather, either to warm or cold.

Calc. carb., teething infants; rachitic children.

Carb. veg., hoarseness worse in the evening; cough coming in spells, usually far apart.

Caustic., entire loss of voice, or great hoarseness, worse in the morning, with rawness and burning in the throat.

Chamom., continued dry cough from tickling in the larynx, worse at night; feverishness; restlessness; impatience; irritableness. One or both cheeks flushed; hot perspiration about the head.

Drosera, constant tickling in the larynx, causing cough and preventing sleep at night. 1st dil. in water. (Baumann.)

Dulcam., when the trouble gets renewed on every sudden change of the weather from warm to cold.

Hepar, croupy cough, worse in the morning; hoarseness; in fall and winter from dry, cold west winds.

Iodium, tickling cough; husky voice; constriction of larynx; worse in morning.

Laches., dryness in throat; sore spot on left side of larynx; feeling as of a lump in the throat; choking sensation in the throat; cough excited from talking, laughing; irritation as if in pit of stomach.

Mercur., chilliness during the fever whenever moving the feet to a cool place in the bed; easily perspiring without improvement; cold in the head.

Nux vom., in the commencement with chilliness, headache, stoppage of nose. From exposure to draughts, or sitting in a cold room.

Phosphor., constant tickling cough from the larynx, also with headache as though it should burst; cough dry; worse from evening until midnight, with tightness across the chest.

Pulsat., chilly, thirstless; worse in the evening and in a warm room.

Rhus tox., tickling under the middle of the sternum; worse from talking or laughing; pain in all the bones worse when being quiet. After straining the voice in singing or speaking.

Rumex, dry cough in paroxysms, induced by hurried or deep inspirations, speaking, inhaling of colder air than usual, or any pressure upon the trachea in the pit of the throat.

Sanguin., highly recommended by Dr. Nichol.

Spongia, fever and irritation in throat, with hoarse, croupy cough, worse from evening; breathing wheezy; spells of choking in the middle of the night.

Tart. emet., rattling cough and breathing; trembling pulse; sticky perspiration; no thirst; pale face; peevishness; drowsiness.

Laryngitis Catarrhalis Chronica.

The *chronic catarrh of the larynx* results often from continued exposure and neglect of an acute attack, or from a continuous series of irritations by overexertion of the voice in talking and singing, or from a chronic pharyngitis in consequence of the abuse of tobacco and alcoholic stimulants.

We find swelling and injection of the mucous membrane either limited to certain parts, or diffused over the whole organ, with a velvety sponginess of its lining membrane. The redness shows less distinctly on the vocal cords than upon the other portions of the mucous membrane; the swelling and thickening of the vocal cords gives to their surface a granulated, and to their edges an uneven appearance. The tumefaction of the epiglottis or of the ventricular bands, or of the ary-epiglottidean folds, amounts sometimes to distortion of these parts. With all this the affected parts are usually covered with dilated veins. Ulcerations, except in follicular inflammation, perichondritis, and œdema, are very rare results of this disease, but on the other hand, secondary chronic laryngitis is almost always accompanying syphilis, ulcerative processes, neoplasms, traumatic irritations and perichondritis.

This state of things necessarily causes various alterations of the voice from slight huskiness, to deep hoarseness and loss of tone. It is always attended with clearing, hemming and hawking, when speaking, on account of the collection of phlegm in the throat, and the sensation of something there that ought to be removed. The secretion is either clear, transparent or whitish-gray, frothy with minute bubbles, or viscid, ropy, or yellowish from numerous pus-cells. There is also more or less cough excited by the laryngeal irritation, which, like the voice, is hoarse and of an unusual timbre. The subjective sensations are mostly those of rawness, scraping, soreness and burning in the larynx, aggravated by the use of the voice.

THERAPEUTIC HINTS.—Any of the remedies detailed under the foregoing chapter may be indicated here. Besides these, one or the other of the following may be required.

Arg. nitr., pharyngo-laryngeal catarrh. Weakness and tremulousness; palpitation of the heart.

Arsen., the lining of the larynx more or less injected, puffy or swollen; voice oftener husky than hoarse, or dull without resonance or timbre. Sensation of dryness, fatigue and tickling in speaking; burning in the throat. Delicacy of constitution; disposition to tubercular deposits.

Calc. carb., the lining of the buccal cavity extremely pale; soft palate and pharynx covered with dilated veins, coloring the parts bluish; throat dry, tongue white. Speaks in a whisper; an attempt to talk loud gives a muffled sound and causes a short, hoarse, barking cough; cough worse from evening till midnight. Complexion waxy; lips almost white; face puffy, particularly the eyelids, with dark rings around the eyes; hands and feet cold and moist. Listless disposition; disagreeably impressed by music and noise; inability for mental or physical exertion, so weak, is hardly able to walk; exertion causes palpitation and breathlessness; night-sweats.

Carb. veg., swelling of the vocal ligaments; the lining of the larynx and particularly of the ventricular bands, of a dingy purplish tint; hoarseness worse in damp weather and in the evening; loss of voice; expectoration moderate, lumpy and easy. Reduced vitality; venous capillary dilatation of pharyngo-laryngeal parts, and prevailing torpor of all functions; cold knees in bed.

Caustic., loss of voice; great hoarseness, worse in the evening; as soon as he tries to raise his voice to a higher pitch, it gives out, or becomes a squeak. Hoarseness of singers and speakers.

Hepar, tuberculous disposition; scanty, tenacious, muco-purulent secretion with difficult expectoration. Seated pain in one spot of the larynx, aggravated by pressure, speech, cough and breathing.

Iodium, follicular catarrh with ulceration; constant tickling cough. Great hunger and yet emaciation.

Kali bichr., pharynx bluish and with varicose veins; the vocal cords and the posterior parts of the larynx are red and puffy and covered with grayish mucus; sensation of dryness; tickling in larynx when speaking; voice rough and hollow; cough with scanty, stringy expectoration, provoked by speaking or laughing.

Kali hydr., arytænoids of a purplish color, tumefied and granular; follicular ulceration; voice hoarse; sounds above the middle key impossible; dry cough; sensation of dryness, burning and tickling in larynx.

Mangan., venous dilatation in the throat and pharynx; partial injection of the ventricular bands; hoarse voice in the morning, better after clearing up lumpy mucus; weak, anæmic individuals with disposition to tuberculosis.

Natr. mur., follicular inflammation of pharynx; after swabbing the throat with nitrate of silver.

Nitr. ac., ulcers in the larynx; toneless voice; previous mercurial abuse.

Phosphor., lining of vocal cords highly injected with ulceration; suppressed voice; talking provokes tickling in larynx and spasmodic cough, followed by great dryness and burning in the throat.

Sanguin., sensation of dryness, soreness and swelling in the larynx, and expectoration of thick mucus; redness in the throat; stoppage of the nose, with headache across the eyebrows.

Sulphur, cough in the evening, before and when going to bed; catarrh of other mucous membranes; disposition to skin affections; suppressed eruptions.

Croup.

Croupous laryngitis produces a fibrinous exudation upon the mucous surface, which coagulates and forms a false membrane, loosely attached, but frequently regenerated. It is therefore nearly related to diphtheria, which in some cases also extends to the larynx, causing all the symptoms of true croup. It differs, however, from diphtheria, in that the exudation never leaves scars behind. In diphtheria, especially in severe cases, the mucous membrane as well as the submucous tissues become destroyed, and cicatrize on healing. Croup may commence in the fauces and extend downwards, or in the larynx and spread upwards. In almost all cases there is a hyperæmic state of the whole mucous membrane of the trachea and bronchial tubes, which at times augments to a croupous exudation in these parts.

Ocular inspection reveals the pseudo-membrane in the fauces, if it commences or extends there; laryngoscopy is in most cases impossible; auscultation reveals nothing but what we can hear, even at a distance,—labored breathing, with a sawing sound.

Croup generally attacks children in early childhood,—from two to seven years and seldom more than once.

Its PREMONITORY SIGNS consist at times in peevishness, feverishness, soreness of the throat, inflammation of the tonsils and fauces, with patches of exudation, as in diphtheria. In other cases there are no such forebodings. The child is aroused suddenly out of a sound sleep, generally about midnight, by a hoarse, dry, croupy cough. It exhibits restlessness and fright, and frequently puts its hands to the windpipe. Soon, however, it falls asleep again, to be again roused by the same dry, hoarse cough, alternating in this way until morning, when usually a remission takes place, and the child seems to be lively and playful. When evening approaches, the child becomes worse again, and, in addition to the cough, we observe the *breathing* to be getting impeded *between* the coughing spells. Not only can we see the labored action of the respiratory muscles, but we can also plainly hear a sawing noise, which the ingress and egress of the air causes in the stuffed-up air-passages. This difficulty increases from hour to hour. The child involuntarily bends its head and neck backwards, in order to free the windpipe as much as possible from all pressure; the alæ nasi move strongly up and down like wings; the epigastric region does not, as is usual during the act of inspiration, bulge out, but is drawn in, in consequence of a deficiency of air in the lungs on account of the obstruction in the larynx. For the same reason we find the xiphoid process and the cartilages of the lower ribs during inhalation drawn strongly inwards, instead of gliding gently downwards, as is natural. When we find inhalation and exhalation equally difficult, there is surely coagulated exudation around the glottis; when, however, as is sometimes the case, only the *inspiration* is difficult and *expiration* easy, it is probable that the difficulty does not lie in the presence of a pseudo-membrane, but in a paralytic state of the muscular structure of the glottis, whereby the epiglottis, during inspiration, is not lifted up from the glottis, thus hindering the free ingress of air; while during exhalation the paralyzed parts easily give way to the returning stream of air.

Thus the child struggles terribly for air; raises up, wants to be carried about, until from sheer exhaustion and the carbonized state of the blood, it sinks into drowsiness and stupor. The face, being at first red, grows pale, finally cyanotic and is covered with cold sweat; the pulse, at first quick, hard and strong, grows very

frequent, small, irregular, intermitting, until at last this fearful scene is closed by general paralysis or suffocation. The temperature may not exceed 101.3° F. in some cases, while in others, especially in complications with bronchitis or pneumonia, it may rise from 104° to 105.8°.

In those cases in which dissolution of the false membrane, or the tearing, loosening and ejection of it, permits recovery, we frequently find a long-continued hoarseness, caused by catarrh of the larynx, or bronchitis or pneumonia, the latter being complications which did already exist during the attack, and made it so much the more serious.

Secondary croup occurs during the course of acute, infective or general constitutional diseases. Of the acute exanthemata, **Measles** is the one most frequently complicated with it, and especially during the stage of desquamation, while pseudo-croup occurs usually as a prodromal symptom of measles. **Scarlatina**, too, and **Small-pox**, when complicated with throat-diphtheria, are apt to produce laryngeal croup; the most fatal complication is that with **Epidemic diphtheria.** Some authors have observed secondary croup during the height of whooping-cough, and in the course of typhoid fever, pneumonia and cholera.

True croup is most readily confounded with **Catarrhal laryngitis** or **Pseudo-croup**; the latter, however, is frequently attended with other catarrhal symptoms, such as sneezing, coryza, etc., and apt to recur frequently. **Diphtheria** is thought by some writers (Wagner and others) not to be an essentially different affection from croup, and that there is no sharp dividing line between the two. But if we take in consideration that in croup the exudation takes place *upon* the free surface of the mucous membrane, and in diphtheria also *within* it, causing necrosis and loss of substance, that diphtheria is contagious while croup is not, and that in many cases of diphtheria a peculiar penetrating smell from the mouth claims at once our attention, we shall hardly find any difficulty in distinguishing between the two, notwithstanding the close similarity of symptoms between them.

The Prognosis of true croup is a great deal more favorable under homœopathic treatment than under allopathic. "While practitioners of the old school of known ability and honesty confess to the most dreadful losses" (Steiner), we of the Hahnemannian school have a *right* to boast of brilliant cures, if boasting it be when physicians of "known ability and honesty" state their successes.

How a man like Johann Steiner can call these men *swindlers* and *ignoramuses*, men who at least in therapeutic science stand far above him, is explainable only when we understand the beclouding influence of bigotry over sound judgement.

THERAPEUTIC HINTS.—Acid. ac., has been used successfully by Dr. Krebs. I have found it curative in a case that did not yield to other remedies and which was characterized by a remarkable bright redness of the face. From five to ten drops of acetic acid in half a tumblerful of water with some sugar make a pleasant acidulated drink. I gave a teaspoonful of it every two or three hours with speedy effect.

Acon., high fever, dry skin, restlessness; the child is in agony, impatient and throws itself about.

Arsen., worse about midnight; great restlessness notwithstanding prostration; bloated face, covered with cold perspiration.

Bellad., sawing, whistling breathing, frequent barking, croupy cough; skin dry and hot; face red; pulse full and sharp; very restless; tonsils red and swollen; patches of exudation on the fauces; midnight attacks.

Bromium, when after Spongia aggravation again sets in next evening; especially in children with blue eyes and light hair.

Calc. carb., in a case of marked calcarea constitution. (H. V. Miller.)

Canthar., in cases where the voice was entirely gone, and there was whistling breathing, and tossing about in bed with the greatest agony.

Caustic., sensation of rawness in the larynx. (E. C. Price.)

Hepar, cough worse in the morning; mucus rattling and yet no getting rid of the phlegm; hoarseness; dry, barking cough; the child cries when coughing; after exposure to cold west wind.

Iodium, as Bromium follows well after Spongia, so does Iodium after Hepar; cough worse in the morning, rattling and no getting loose; hoarseness; especially in children with black eyes and dark hair.

Kaolin, first recommended by Aegidi; it seems to be especially indicated where the croupous inflammation has its seat in the lower portion of the larynx or in the upper part of the trachea, which may be recognized by the much more laboring and sawing respiration. (I. Landesmann.)

Kali bichr., worse early in the morning; inflamed fauces; membranous deposition; hoarseness; fat, chubby children.

Laches., the child cannot bear anything touching its throat; aggravation in the afternoon, after and during sleep; patches of exudation in the fauces; commencing paralysis of the lungs.

Lycop., spasmodic motion of the alæ nasi; crossness after sleep; can't bear to be covered.

Phosphor., in combination with bronchitis; great weakness; aggravation evening up to midnight; lying on back provokes the cough.

Sanguin., in a case with whistling cough, or of metallic sound, as though coughing through a metallic tube.

Spongia, very dry, crowing sound of cough; always commencing to get worse in the evening; sawing sound of respiration even during remission.

Tart. emet., face cold, bluish, covered with cold perspiration; pulse very frequent; rattling as if the chest and trachea were full of mucus without expectoration; great sinking of strength; commencing paralysis of the lungs.

Von Grauvogl advises:

Cuprum, when spasmodic affections, such as asthma spasmodicum, whooping-cough, chorea; or cholerine, etc., are prevalent (epidemic) at the time with other people.

Ipec., **Iodium** or **Bromium**, when intermittent affections prevail.

Hepar, when panaritiæ, anginæ, urticaria, or erysipelas are the prevailing diseases.

Schüssler advises:

Kali mur. at first, or

Ferr. phosph., when there is violent fever.

Calc. sulph. later, if required.

Kali phosph., in cases coming too late under treatment, with great weakness, pale, bluish face, etc.

Tracheotomy.—"Out of quite a large number of cases occurring in my practice, *before I had adopted the operation of tracheotomy*, I saw but three recoveries; since 1863, however, this discouraging rate has been so much improved by the employment of tracheotomy that the mortality has at different times amounted only to sixty, sixty-five and seventy per cent. Bricheteau states it at sixty-nine, Franque at sixty-eight, Trousseau at fifty, and Greve in Sweden at twenty-three per cent." (Steiner.) "Among the 1,698 cases of tracheotomy collected by Duchek, a favorable result occurred in 428 operations, a proportion of 1 to 3.9 (25.2 per cent.), which is probably the correct average." (Steiner.)

"In fatal cases of croup, where the symptoms consist of great dyspnœa, *pallid* face and lips, cold extremities and very feeble pulse, post-mortem examination will disclose fibrinous deposits in the heart, and such cases, if operated upon, are sure to die; while if there be *turgescence* and *lividity* of the face, with *blueness* of the lips, accompanied with extreme dyspnœa, the obstruction is evidently in the trachea, and the case, therefore, offers much greater hope of recovery by operation." (Dr. Richardson, of London.)

"Tracheotomy is no more curative of croup than are emetics; it cannot even arrest the croupous process; its only office is to establish a new provisional air-passage while the danger of death from laryngeal stenosis lasts, and to assist Nature in her efforts to cure; and no other means fulfil these indications so certainly and so directly." (Steiner.)

In short, although tracheotomy is not a sure cure for croup, it may in violent cases procure time for the selection and action of the medicine which finally will subdue the croupous process and thus be a means of saving the child. This is applicable even to Homœopathic treatment.

Œdema Glottidis, Œdema Laryngis

Consists of a serous or sero-purulent infiltration of the submucosa, following either inflammatory or non-inflammatory processes.

The *inflammatory* form has been designated as **Laryngitis phlegmonosa**, embracing all such inflammations of the larynx which have their seat principally in the submucous connective tissue. It is always of a secondary nature, and may be the consequence of a catarrhal laryngitis when renewed attacks or new injuries spread the inflammation in depth to the submucous connective tissue, or it is connected with laryngeal diphtheria, or the consequence of *chemical* or *thermal* irritants or *mechanical* irritations by foreign bodies; or it is an extension of inflammatory processes from neighboring parts, such as wounds of the larynx and its vicinity, or retro-pharyngitis, tonsillitis, pharyngeal diphtheria, angina Ludovici and parotitis. The most frequent cause is inflammation of the perichondrium of the laryngeal cartilages, in consequence of tuberculous, syphilitic, typhous and carcinomatous ulcerations. At last we find it in connection with pyæmia and septicæmia, with ulcerative endocarditis, typhus, variola, scarlatina, measles and erysipelas.

The inflammatory process may be *diffuse*, or *limited* to the aryteno-epiglottidean folds, and is then more marked on one side than on the other; it affects the submucous tissue of the vocal cords alone only rarely, and exists below the cords still more rarely.

The *non-inflammatory* form, a simple, serous infiltration of the submucosa, or dropsy, is either a part of general dropsy, in consequence of nephritis, malarial cachexia, amyloid degeneration of the kidneys, etc.; or a dropsical manifestation from diseases of the heart, emphysema and cirrhosis of the lungs; or the result of compression of the superior and inferior thyroid, or facial, or internal jugular and the innominate veins by enlargement of the thyroid gland, or the swelling of the lymphatic and salivary glands, or by new formations about the neck, aneurism of the aorta, etc. The œdema will be unilateral or bilateral, according to the site and extent of the hindrances to the circulation. The œdematous parts appear pale or pale red, translucent and flabby; the mucous membrane is neither injected nor swollen. By means of the laryngoscope, we can best decide the nature of the affection.

The most prominent *symptom* of either form is **Laryngeal dyspnœa**, which at first is only inspiratory, while the expiratory stream of air passes the larynx without any difficulty. The reason of this is, that during inspiration, the air presses the swollen parts around the introitus laryngis together, thus closing its aperture, while during expiration the out-rushing air pushes them asunder. However, this difference ceases when the infiltration spreads to the aryteno-epiglottidean folds, to the epiglottis and the superior cords. There is also hoarseness and barking cough. The intensity of the laryngeal stridor depends always on the grade of swelling of the soft parts, and it terminates in suffocation if the obstruction can not be relieved. The inflammatory form may result in abscesses or ichorization.

THERAPEUTIC HINTS.—In general I must refer to the various causes of this affection above detailed. In special compare:

Acon.

Apis, when it occurs in connection with erysipelas or eruptive fevers.

Arsen., when in connection with general dropsy, following kidney diseases, etc., with great restlessness and prostration.

Arum triph., when in combination with diphtheria or scarlet fever.

Bellad., sudden attack; fauces deep purple; all the parts of larynx œdematously, swollen; pain deep in throat; stiff neck; wild expression of eyes; great prostration. One drop of tincture in pint of water, by teaspoonful. (P. J. Valentine.)

Canthar., when in consequence of burns.

China, when in connection with dropsy; inspiration short and difficult, expiration easy.

Laches., when in connection with albuminuria; dark, almost black urine, like coffee-grounds.

Phosphor., in connection with heart-disease.

Sanguin., tonsils and pharynx swollen; sawing, rasping respiration; expiration easier than inspiration; cough dry and harsh relieved by sitting, aggravated by eating or lying down; difficult expectoration of tough, glairy mucus; inflammation of cervical glands. 1st trit. (Th. Nichol.)

Swallowing of small pieces of ice has been found beneficial by Niemeyer in the inflammatory form.

If in bad cases medicine does not quickly relieve, scarification of the swelling must be tried, and if that does not succeed, tracheotomy is the only means to prevent suffocation and gain time for further medical treatment.

Perichondritis Laryngea.

The inflammation of the perichondrium of the laryngeal cartilages is not easily recognized in the beginning, because pain, swelling, cough, hoarseness and laryngeal stenosis are symptoms of various laryngeal affections. When however the inflammation has reached the stage of an abscess which has broken, a diagnosis may be more readily formed. The cartilages most liable to be affected are the *cricoid* and the *arytenoids*. If it be the *cricoid*, the swelling will be found on the posterior wall of laryngeal opening, or when seated in one of its lateral portions, somewhat towards the one or the other side of the posterior wall; if it be one of the *arytenoid* the swelling will be seen more anteriorly either on the right or the left side in the neighborhood of the cartilages of Santorini and Wrisberg.

Thyroidal perichondritis may exist either on its inner surface, or penetrate to its outer surface and form a laryngeal fistula. Perichondritis of the *epiglottis* is of rare occurrence, usually in connection with the same process in the cricoid and thyroid cartilages, or with other ulcerative processes.

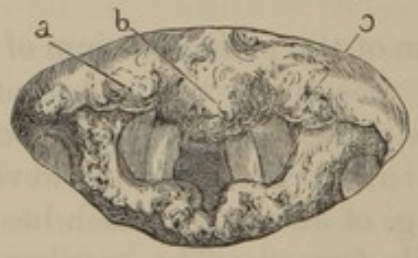
The CAUSES of laryngeal perichondritis are various. It may arise from traumatic influences, for instance from the frequent introduction of the œsophageal sound in old persons; from tuberculous, typhous, syphilitic or cancerous ulcerations; from primary laryngeal chondritis.

THERAPEUTIC HINTS.—All in all the disease being more of a secondary nature, the accompanying primary disease will have to be studied first; therefore a number of remedies will offer themselves for consideration. As acting especially upon the cartilage, Von Grauvogl designates *Silicea*.

In cases where the abscess closes the larynx, *tracheotomy* will have to be resorted to.

Phthisis Laryngis, Tubercular Ulceration.

As a rule, tubercular ulceration of the larynx is secondary to pulmonary tuberculosis and co-existing with it; in exceptional cases it may precede pulmonary manifestations, at least palpable ones. Commencing with slight hoarseness, lack of ring and easy giving way of the voice on taking a slight cold, which however gradually subsides, the trouble is often overlooked. The laryngoscope shows at this time partial injection and swelling of the vo-



EXTENSIVE PHTHISICAL ULCERATION. (After Türck.) a, b, c, Remnants of Epiglottis.

cal processes, of the inter-arytenoid region and the cartilages of Santorini. In other cases there is a striking anæmia of the mucous membrane and not seldom paresis of the muscles. Gradually by renewed colds, ulcers form on these places; they may be single, they may spread to the epiglottis and to the ventricular bands and vocal cords, and form an extensive ulceration all around the glottis. The hoarseness increases, often to total aphonia; the cough is generally without tone or power, and there is usually soreness on swallowing, and burning and stinging pain in the region of the larynx. The ulcers of phthisical subjects

present no characteristic signs by which they could be recognized as such, we must consider the whole history of the case (whether there be any syphilitic taint) and its present state (co-existing pulmonary tuberculosis), in order to form our diagnosis.

The PROGNOSIS is that of tuberculosis in general, a poor one; still, if the course of the disease is slow, and the frequency of the pulse does not, for any length of time, exceed 96 to 100; if the ulceration is not too extensive and the co-existing tubercles in the lungs are not in an extensively softening process, and no new infiltrations occur, and also if the patient can and does implicitly follow our advice, we surely will be able by a careful study of the case to prolong life, at least.

THERAPEUTIC HINTS.—The treatment of pulmonary tuberculosis must be studied. For the prominent laryngeal symptoms, compare Laryngitis Chronica; besides consider:

Arg. nitr., swelling of the parts; ulcers with luxuriant granulations; titillation in the larynx; much hawking, or spasmodic cough, and accumulation of phlegm.

Arsen., "dirty red, or anæmic appearance of the laryngeal lining, with bluish-red patches, or general discoloration of the tissues; indolent, or burning extensive ulceration, with more or less sero-purulent secretion. Pulse small and feeble; progressive emaciation and weakness." (Meyhoffer.)

Bellad., for intercurrent "colds," with difficult and painful deglutition; spasmodic or barking cough.

Carb. an., greenish expectoration; lungs affected, especially right side; enlarged glands; copper-colored spots on face and body; earthy colored face; great exhaustion.

Carb. veg., evening hoarseness; bloatedness; rancid belching; the most innocent food disagrees. Great tendency to perspire about the chest and to take cold on least change of temperature; knees always cold but especially at night in bed.

Iodium and **Kali hydr.**, in scrofulous subjects; follicular swelling of throat; extensive ulceration.

Laches., ulceration on left side of glottis; bluish inflammation of fauces; voice and cough without tone.

Merc. jod., after **Bellad.**, "dark red inflammation and swelling of the parts with much hawking, coughing and purulent expectorations worse in the morning. (Meyhoffer.)

Nitr. ac., "great irritation; redness and ulceration of the epi-

glottis and larynx, with difficult and painful deglutition, violent dry cough and nocturnal perspiration.". (Meyhoffer.)

Phosphor., **Sepia**, **Silic.**, **Stramon.** and **Sulphur**, ought not to be overlooked.

Syphilis Laryngis

May consist of a mere **Catarrh**, scarcely distinguishable from an ordinary catarrh; or of **Condylomata**, which are flat wart-like papules, with a thick, whitish gray, adventitious covering of epithelium; or of **Gummy tumors** or **Syphilomata**, consisting of little roundish swellings of the size of a pin-head to that of a small pea, usually of the color of the rest of the mucous membrane, and frequently found in rows; or of actual **Ulcers** of various extensions and depth. The diagnosis of all these must be made from the history of the case, from the evidence of other syphilitic affections, especially in the pharynx, on the skin and in the bones, and by the laryngoscope. Ulcers may lead to syphilitic perichondritis, to hæmorrhages, and papillomata, which often form in the vicinity of syphilitic cicatrices.

THERAPEUTIC HINTS.—**Aurum**, accompanied by ulcers on the roof of the mouth; previous mercurial treatment; affections of the bones.

Merc. sol., when ulcers appear also on the tonsils.

Merc. jod., painless ulcers.

Kali hydr., previous mercurial treatment.

Kali bich., ulcers on the soft parts of the fauces.

Nitr. ac., painful ulcers; abuse of mercury; condylomata.

Thuja, condylomata.

Neoplasms of the Larynx.

Of these, the **Papilloma** or **Fibroma papillare** occurs most frequently; it is a proliferation of the connective tissue, commencing by preference on the anterior extremities of the vocal cords. The **Papillomata** are in fact hypertrophied papillæ, covered with a thick layer of epithelial cells. Their size and form varies, representing either little buttons or pegs, or warty formations like a cock's comb; in some cases they attain to huge growths similar to a berry, grape, or cauliflower, which may partly or entirely fill the upper and middle laryngeal cavity.

The **Fibroma**, or **Fibrous polypus** is also of frequent occurrence, appears mostly single, rarely multiple, takes its origin on the vocal cords. It presents itself as a little, generally pedunculated, roundish or pear-shaped tumor, of a dirty whitish or reddish, or dark red color, sometimes with distinctly branching vessels on its surface. Its size may attain to that of a hazel-nut, and its consistence is either hard or soft. Fibrous polypi usually are of slow growth.

Mucous polypi and **Cystic tumors** are of not so frequent occurrence. They take root in the ventricle of Morgagni by preference, being attached to a broad base; they grow slowly and seldom attain any considerable size. When incised, they slowly empty their more or less thickened contents.

Carcinoma or **Cancer** occurs tolerably often within the larynx, and especially in its *epithelial* form. Its seat is almost invariably the upper and middle portion of the laryngeal cavity. Laryngoscopic examination seldom shows very characteristic conditions at the beginning, especially in those cases in which cancerous infiltration into the submucous tissue produces a uniform intumescence of the soft parts, with strong vascular injection of the mucous membrane. Later, however, when the intumescence becomes considerable and extensive ulceration takes place, with enlargment of the lymphatic glands of the neck, and an extension of the morbid process to the pharynx or œsophagus, its diagnosis is easy enough.

THERAPEUTIC HINTS.—Usually, that is since the laryngoscope has been in use, the neoplasms have been treated surgically either by cauterization or by extirpation, or by still more complicated surgical operations. We are sadly in want of observations gained by pure homœopathic treatment. If it, however, is beyond doubt that similar morbid growths on other parts of the body have been removed by the administration of homœopathic remedies alone, there is no reason why a similar treatment should not succeed in these cases. Compare, for instance, polypi in ears, nose, etc. For cancerous disorganization even extirpation is of no avail.

Neuroses of the Larynx.

These are either neuroses of *sensation* (anæsthesia, or hyperæsthesia, neuralgia of the laryngeal mucous membrane), or of *motion* (paralyses or spasms of certain muscles of the larynx).

Anæsthesia, or diminution or total extinction of sensibility in the laryngeal mucous membrane, is an ordinary symptom of approaching death; it occurs in diphtheritic paralysis of the organs of the throat, and at times in hysteria. Its degree and extent vary, and can only be ascertained by carefully testing the parts by the probe under guidance of the laryngeal mirror.

THERAPEUTIC HINTS.—Argent., Gelsem., Kali brom. Electricity. Strichnine.

Hyperæsthesia and **Neuralgia** occur most frequently in inflammatory and ulcerative conditions of these parts. When it is a symptom of general nervousness, as in hysteria, it is frequently attended with a spasmodic cough of longer or shorter duration, and at times periodically recurring at a given hour. Hypochondriasis too, especially in persons suffering from seminal emissions, is at times attended with great sensitiveness of these parts.

THERAPEUTIC HINTS.—**Ignat.** meets frequently the hysterical cough. Other symptoms must necessarily be taken into consideration. If in connection with inflammatory conditions, compare these.

Paralysis may be *bilateral* in consequence of a paralysis of the trunk of the recurrent of both sides. The recurrent innervates all the muscles concerned in the locomotion and tension of the vocal cords, except the crico-thyroid muscles. Such a paralysis is therefore characterized "by absolute loss of voice; inability to cough or expectorate with force; undue expenditure of breath on making attempts at phonation, or at forcible expiration, for instance in coughing; the absence of dyspnœa during quiet breathing, at least in adults; laryngoscopally, the cadaveric (widely opened) position of both vocal cords, the edges of which still further approximate each other on forced inspiration." (Von Ziemssen.) It may be *unilateral* when the trunk of the recurrent of one side only is paralyzed. This causes the voice to lose its ring and become impure (rattling), being rendered so by tremors; on straining it in speaking loud, the voice readily breaks into a falsetto, and the patient becomes wearied. The vocal cord of the paralyzed side remains motionless during pho-

nation, while the healthy cord and arytenoid cartilage pass over the median line. When the posterior crico-arytenoid muscles, the office of which is that of widening the glottis during respiration, become paralyzed, the inspiratory opening of the glottis is extinguished, and true stenosis of the glottis of the highest grade, with danger of asphyxia, is established. The mirror shows the glottis transformed into a narrow slit, which is still further narrowed by the external atmospheric pressure during inspiration, while during expiration the glottis returns to its original size. Inspiration, therefore, causes loud sounding vibrations of the vocal cords, which are pushed forward to the middle, while expiration takes place unhindered, is short and noiseless. The voice seldom undergoes any change.

Still other individual muscles may be paralyzed, but they are of less importance.

THERAPEUTIC HINTS.—Compare: **Bellad.**, Bryon., Coccul., **Caustic.**, Cuprum, Ignat., Plumbum, Zincum. **China** and **Stramon.**, difficult inspiration and easy expiration. Electricity.

Paralytic or Paretic Aphonia, may require:

Amm. caust., when attended with bronchial and asthmatic symptoms, great general muscular debility, exhaustion and tremors.

Ant. crud., loss of voice from getting heated by exertion; return of voice by resting.

Arg. met., hoarseness after singing and preaching; anæsthesia of the fauces.

Arum triph., aphonia after singing or speaking; voice changes in tone frequently.

Bellad., aphonia comes on suddenly.

Caustic., sudden loss of voice after taking cold, often combined with catarrhal symptoms.

Cina, peculiar twitching of the right hand when coughing; right side of chest constricted, with difficult breathing; gurgling noise down along the œsophagus. (Kafka)

Cupr. met., aphonia from central causes after convulsions.

Gelsem., after diphtheria; during catamenia.

Ignat., in hysteria.

Laches., paralysis of left vocal cord; worse after sleep; tenderness to touch.

Nux mosch., aphonia from walking against the wind; hysterical, gastro-intestinal and cardiac derangements.

Nux vom., coming on suddenly and combined with catarrhal symptoms.

Opium, loss of voice from fright.

Phosphor., vocal cords broad and relaxed; tired; pale; chest oppressed; menses too often. (Welch.)

Platina, in uterine disturbances.

Rhus tox., after straining the voice.

Stramon., from cerebral disease and great mental excitement.

Sulphur, chronic cases of all kinds.

Spasm of the Glottis.

In books this affection has been described under various names: **Asthma spasmodicum** or **Laryngeum infantum, Asthma periodicum acutum infantile, Laryngimus stridulus, Laryngitis stridulosa.** The most prevalent, however, and at the same time the most inappropriate names are **Asthma Millari** and **Asthma thymicum Koppii.** It is quite difficult to understand how the description which Millar gives of a certain affection of children, and which he himself styles **Asthma acutum**, could ever have been applied to spasmus glottidis, as it portrays quite clearly what we may express by the term of **Laryngitis.** He even recognizes the "white, tough, jelly-like stuff," with which the windpipe was found filled after death. The term **Asthma thymicum Koppii** is likewise inadmissible; for the assumption which it implies, that these spasmodic fits be caused by a swelling or enlargement of the thymus glands has, in consequence of late pathologico-anatomical researches, become unattainable.

The Symptoms of spasmus glottidis are as follows: It commences with slight and short attacks of dyspnœa, attended by a wheezing noise during inspiration, whereby the children move uneasily and show an anxious expression. Soon all is over; and if the attacks happen during the night they may be overlooked altogether. By and by, however, these spells increase in number, intensity and duration. The child is suddenly attacked in consequence of a little fright, or whilst crying, laughing, drinking, or especially in the moment of getting awake; its inspiration becomes whistling, crowing and so difficult that it strains all the respiratory muscles to draw the air through the spasmodically closed glottis into the lungs. Expiration is quite impossible, and thus respiration ceases for a while altogether. The face of the

child expresses the greatest agony and sense of suffocation, and becomes purple; cold perspiration appears upon the forehead; the veins of the neck become turgescent and the thorax is motionless. The pulse falls at this stage and is small and intermitting. This fearful condition lasts in severe cases a minute or two at the utmost, generally only a few seconds; then with a loud, crowing cry the child again catches its breath, is exhausted, cries and sobs, but shows no signs of fever or any catarrhal affection. The number of attacks may amount to ten, twenty, even fifty, in the course of a day; and if the complaint be not arrested it may terminate in general convulsions and death.

The age in which children are attacked by this disease lies, in most cases, between their fourth and fourteenth month; as they grow older and stronger, the spells grow milder. In *adults* it is of rare occurrence, and then much less severe, on account of the larynx being more developed at that age. The female sex during the age of puberty, is the most frequently attacked amongst grown persons. Its pathological character is a disturbed action of the nervus vagus or recurrens, either from central or peripheral irritation. In children *rachitis* is the principal cause. Post-mortem examination shows the larynx entirely free from any morbid changes.

THERAPEUTIC HINTS.—**Bellad.**, congestion to the head; throbbing of carotids; teething process; drinking excites the spasms.

Bromium, gasping and snuffing for breath.

Chlorine, (the gas in water) crowing inspiration and expiration impossible (Dunham). The respiratory acts consist of a succession of crowing inspirations, each one followed by an ineffectual effort at expiration, the whole serving to inflate the chest to a most painful extent. (W. S. Searle.)

Cuprum, bluishness of face and lips; convulsions; after fright of mother or child. Cold perspiration at night; cough relieved by a swallow of cold water.

Gelsem., inspirations long, with crowing sound; expirations sudden and forcible.

Ignat., difficult inspiration with easy expiration; hysteria.

Iodium, tightness and constriction about the larynx, with soreness, hoarse voice, etc. Enlargement and induration of the glands, cervical and mesenteric; absence of appetite; utter indifference to food; scanty, high colored urine; clayey evacua-

tions; emaciation; yellow skin; action of heart feeble and much increased by motion. (Dunham.) Rachitic children; swelling of bronchial glands; thymus gland (perhaps) enlarged.

Ipec., blueness of face and coldness of extremities, at the commencement.

Laches., sensitiveness of larynx and trachea to the touch.

Mephit., similar to Chlorine, has suffocating feeling with inability to exhale; bloated face and convulsions. (W. S. Searle.)

Moschus, in hysterical women.

Phytol., "frequent spasmodic closure of the larynx; drawing of the thumbs into the palm; flexion of the toes; distortion of the face; muscles of the eyes affected so that the motions of one eye were independent of the other." (Kapp.)

Plumbum, spasmodic closure of the rima glottidis; mucus rattling in throat, with sudden difficulty of breathing and asphyxia.

Sambuc., able to inhale but not to exhale; becomes livid in the face; gasps in great anguish and very slowly recovers its breath; awakes from sleep with suffocation. (C. Wesselhœft.) Burning red, hot face, hot body, with cold hands and feet *during sleep;* on *awakening*, the face and body break out into a profuse perspiration, which continues as long as the patient is awake; on falling asleep again, the dry heat returns.

Veratr., cold perspiration on forehead, and cold extremities.

The following remedies may also be indicated in individual cases: **Arsen.**, **Calc. carb.** and **phosph.**, **Chamom.**, **Corall. rubr.** (Meyhoffer), **Hydr. ac.**, **Lauroc.**, **Phosphor.**, **Silic.**, **Spongia**, **Sulphur.**

The rachitic conditions require: **Calc. carb.**, **Hepar**, **Iodium**, **Silic.**, **Sulphur.**

THORAX.

This is a chapter of great importance, and at the same time of difficulty. Its exploration we will have to undertake on different roads. We must know what is to be learned by *inspection*, *palpation*, *percussion*, and *auscultation*.

I. Inspection—Ocular Examination.

If we consider that the thoracic cavity holds within itself the lungs and heart, the organs of respiration, and of circulation, we shall understand why it is that the first phenomenon which strikes the eye is the *continuous motion* in which we find its walls engaged.

This **Respiratory motion** of the chest in *men* is greatest in the region of the lower ribs on each side; in *women*, on the upper part of the chest; and in *children*, towards the abdomen.

The number of respirations varies according to age, sex, and individuality; so that we might put down the normal number of respirations per minute in grown people at from twelve to twenty; in young persons, from fourteen to twenty-four; in children, about twenty-six, and in infants about forty-four. But there are other conditions which may materially modify the frequency of respirations—such as mental excitement, bodily exertions, digestion, temperature, and other conditions of the air. As a rule, however, if compared with the pulsations of the heart, it may be said, that during one respiratory act there are three or four beats of the heart; but these respiratory motions of the lungs and pulsations of the heart never correspond in rhythm, as you may easily ascertain by counting your pulse, and observing your breathing at the same time, the pulse being a little too fast or a little too slow to make up an even count between respiration

and pulsation. This is a very interesting fact, which it is well to bear in mind. When respiration and pulsation become *synchronous*—that is, when upon each act of respiration for a length of time fall precisely two, three, four, five, or six pulsations—we may be pretty sure that death is near. My attention was first drawn to this interesting fact by Dr. Hering. Since then I have found it verified many times. Its explanation is another matter. We might, perhaps, explain it, if we remember that the heart's action is governed mainly by the *sympathetic nerve*, while the lungs are under the control of the *vagus*, though each of them sends branches to the other organ, the sympathetic to the lungs, and the vagus to the heart. The sympatheticus is the great nerve of organic life, and under its direction all the functions of the body are performed, which are entirely out of the reach of the will. It arises from a series of ganglia, extending along each side of the vertebral column from the head to the coccyx. The vagus has its origin in the brain, and its fibres may be traced through the fasciculi of the corpus restiforme into the gray substance of the floor of the fourth ventricle, and therefore the parts to which it is distributed are more or less under the control of the will. When death approaches, or, in other words, when the separation of soul and body commences, those functions which are more or less under the control of the will are most probably the first to cease. The vagus losing its influence upon the lungs, their action is now continued under the sole direction of the sympatheticus as long as organic or vegetative life still continues; thus respiration and pulsation act in full harmony—become perfectly *synchronous*.

"The respiratory motion of the chest itself in ordinary health is comparatively slight, in consequence of the thoracic cavity being enlarged in every direction nearly simultaneously. It resembles the easy ebb and flood of a soft wave. When, however, a deep respiration is taken, it is observed that the sternum is slightly but steadily projected forward, the abdominal parietes gently dilated. The lower ribs are first and most considerably raised, and the elevation of each separate rib takes place gradually, evenly, and regularly upwards, notwithstanding which, each and all *appear* to move at the same time. Every part acts separately, but each in perfect harmony with the other." (H. M. Hughes.)

Without any deviation in form, a remarkable stillness and

want of movement may be observed either of a whole side or only a part of it. This is a sign of inflammation of the pleura in its early stage.

The *thoracic breathing*, when the diaphragm is not moved, is a sign of *peritonitis;* the *abdominal breathing*, when the ribs are not moved, is a sign either of inflammation of the chest, or of paralysis of the respiratory nerves, except the phrenic, from injury of the upper part of the spinal cord.

The **Form** of the thorax must also be taken into consideration, and this must always be done by comparing one side with the other. In this way, if we bear in mind the natural motion and the natural shape of the thorax, ocular inspection will reveal the following noticeable facts:

1. The upper ribs sink away from the clavicle, become flattened and motionless, while, in many cases, the movement of the lower ones is not interfered with, and, as a general rule, the change is more evident on one side than on the other. This is a sign of *advanced phthisis.* (Barclay.)

2. The chest is full and rounded; the ribs stand out, but have a very slight range of movement, and the inspiratory effort is marked by powerful traction of the muscles of the neck; the movement of the lower part of the chest is very often *inward* in place of *outward*, during inspiration. (Barclay.) These are some of the physical signs of *emphysema* of the lungs, that morbid state in which the volume of the organ is increased in consequence either of the dilatation of the air-cells, or, what is of rarer ocurrence, of the escape of air into the space between the lobules or beneath the pleura; and also of *croup.*

3. Only one side bulges, the intercostal spaces are obliterated and the respiratory motion is annihilated. This is a sign of a collection of serum—*hydrothorax*, or of pus—*pyothorax*, or of gas —*pneumothorax*—into the pleural sac.

"But in many advanced cases of pleuritic effusion, of empyema (collection of pus) and of pneumothorax, with effusion, not only, as before stated, is the side *not* enlarged, but it is, on the contrary, contracted; and not only are the intercostal spaces not widened and prominent, but they are actually much narrowed. Herein exists a notable example of that which is so necessary to bear constantly in mind, that the results of one mode should be carefully compared with those deduced from other modes of physical examination, and the whole weighed together with the observa-

tions derived from the history and the constitutional symptoms of the case under examination. Because the side is contracted, and the intercostal spaces narrowed, as observed upon inspection, it might be hastily assumed that there was no fluid in the chest, while in truth the contracted side might be actually filled with pus or serum, and the other, supposed from its greater size to be the one diseased, might be quite healthy." (H. M. Hughes.)

4. A general fulness or roundness of the precordial region may be sometimes observed. This is the case when the heart has been enlarged for a considerable time, or when fluid effusion has long existed in the pericardium. *Nota bene:* A broken rib may bulge out too!

II. Palpation—Manual Examination.

This is a method of using the hand with its sense of touch, for the elimination of certain conditions of the thorax. We may merely tap with one finger, or lay the whole hand upon the parts to be examined, press or glide gently over the surface, according to the requirements of the case. In this way we become cognizant of *temperature, form, resistance and motion* of these parts.

The **Temperature**, if raised to *calor mordax*, fairly burns and stings the examining hand, and is found on the chest in far advanced pulmonary complaints. We feel at the same time the condition of the skin, whether it be dry or moist, harsh or soft.

The **Form.** When it is convenient to expose the chest of a patient, the appressed fingers of one hand placed flatly and pressed firmly upon the infra-clavicular region of one side, while the other is similarly placed and pressed upon the corresponding region of the other side, are often capable of distinctly appreciating a flatness of one side, or a difference in the pliability or expansibility of the two sides, even in the early stages of phthisis.

The **Resistance** depends upon the character of the parieties and the contents of the thorax. The resistance of the *parieties* is greater, the more convex, stiff and strong the thoracic bones, and the narrower the intercostal spaces are. It is more yielding where the contrary conditions exist. In the acromial region the resistance to pressure increases when the muscles are put upon the stretch. The resistance of the *contents* of the thorax increases *in the ratio as they are compressed.* Whether there be much or little air, water or pus collected in the cavity, it has no influence upon

its resistance to external pressure. But when this air, water or pus becomes *compressed*, and in consequence the walls which contain it are put upon the stretch, its resistance increases in the same ratio, and such swelling within the chest may feel as hard as a stone. *Hepatization* of the lungs gives a considerable resistance, but it is greater in exudations under the above-mentioned conditions.

Palpation lastly reveals different kinds of **Motions** which originate within the cavity of the chest. The most important of them is the **Vibration of voice**, or the **Vocal fremitus**, of which we become cognizant by placing our hand upon the thorax of a person who is in the act of talking or singing. Its force corresponds with the power and depth of the voice, so that we feel it much stronger in men of a deep base voice than in other persons, whose voices are of a higher pitch. Singing and screaming causes fremitus even in the highest-toned voice. The *localities* in which it is perceived, arranged according to the strength of the vibration, are as follows:

1. *Larynx and trachea down to the sternum in front and laterally.*
2. *The last four cervical and first three dorsal vertebræ of the adjacent portions between the scapulæ*, especially in thin persons and children.
3. *The acromial and subclavian regions down to the liver and spleen*, on the *right* side much stronger than on the *left*.
4. *The lateral regions, from the axillæ down to liver and spleen;* to the fifth rib stronger on the *right* side; *below* the fifth rib stronger on the *left* side.
5. *The posterior inferior regions from the edges of the shoulder-blades downwards.*
6. *The shoulder-blade region.*
7. *The manubrium sterni.*
8. *Where the liver or the enlarged heart or spleen lie close to the thoracic wall*, the *fremitus* is *not felt at all.*

The mammæ of women decrease the vibration of the voice, but do not suppress it altogether. In thin persons with a long thorax, the fremitus is stronger than in persons with a broad but short thorax. It is felt more in the horizontal than in the upright position. This is its normal condition in health.

In *disease* it may be *increased* or *decreased.*

It is **Increased** when the bronchial walls become thickened by chronic inflammation; or when the lungs become hepatized, or

infiltrated with tubercles, or indurated and consolidated. It is also increased by cavities, which lie near the periphery, contain air and not much fluid, and which are surrounded by walls of good conducting quality; in short, *its increase depends upon good conductors of vibratory motions.*

The **Fremitus is decreased** by the presence of large abscesses or gangrenous destruction or softening of the substance of the lungs; it is decreased or even suppressed when gas or serum fills the pleural sac; and it is decreased when the bronchial tubes are filled with mucus, pus or blood; in short, in all cases *where the vibratory undulation has to pass through different media, air, fluids and solids.*

For here, too, is the physical law of the conduction of sounds applicable; *the more equal the media in respect to density and elasticity, the better do they conduct sounds; the greater their inequality of substance, the less is their conductive power.*

Another vibratory motion within the cavity of the chest, which manifests itself to manual examination, is, the **Ronchus vibration,** caused by tough mucus lodged in the larynx, trachea or bronchial tubes, and brought into vibratory motion by the in-going and out-going current of air. This vibration very often extends over the whole chest, although only a little tough phlegm may be the cause of it, which can be thrown off by a single cough.

When, however, the cause of this vibration consists of phlegm lodged in the bronchial tubes, the rhonchus vibration is not felt in the trachea and larynx, but may extend all the way down to the bronchial periphery. For this reason we can never judge from the extension of the vibration to the extension of its cause; in other words, it does not follow that because we feel the rhonchus fremitus all over the chest, that there should be phlegm all through the chest. This would be a mistake which could be made only by those who do not understand the propagation of rhonchus vibration.

A third vibratory motion, recognizable by manual examination, is the **Peculiar rubbing or grating feel,** which occurs when the surface of the pleura pulmonalis and costalis—which naturally glide smoothly upon each other—are roughened by solid effusion between their contiguous surfaces, as in pleurisy. It is mostly of short duration, but may last in some cases months, and even years. The same motion is caused by fibrous deposits within the pericardium, in consequence of pericarditis; it resembles very much the purring of a cat.

A fourth motion which the examining hand discovers upon the thoracic walls are the **Pulsations of the heart.** "While the body is erect, the heart, when in a natural condition, is constantly felt to strike the parietes between the fourth and fifth ribs about an inch below and to the inner side of the nipple. While lying upon the back, its impulse is greatly decreased, and is usually felt somewhat nearer to the sternum. When the body is turned to the left side, the impulse is felt in a direct line with, or often nearly an inch to the outer side of a line passing vertically over the nipple; while, on the contrary, when the body is turned to the right side, it is felt between the cartilages of the ribs, close to the sternum, or sometimes cannot be felt at all.

"When the parietes of the heart are thickened, or hypertrophied, and the force of its impulse is consequently increased, the hand, placed over the precordial region, becomes at once sensible of its abnormal force, though the pulse at the wrist may at the very same time be small and feeble. In considerable hypertrophy of the left ventricle the apex of the heart strikes not only lower, but also outside, or to the left of the nipple line.

"When the cavities of the heart are dilated, with or without any increase of the thickness of their walls, the impulse is often perceptibly extended over a larger space than natural, and may be felt not only above, below, and around its ordinary site, but also in the scrobiculus cordis; and sometimes even on the right of the sternum. It must, however, be recollected, that in nervous and excitable persons of spare habit, the impulse of the heart is often very extensively diffused, even when no disease of the heart exists; and, therefore, that a widely-extended or diffused impulse is by no means a proof of the existence of disease in the heart, or in any other organ.

"When the heart is removed from its natural situation by gaseous or fluid effusions into the pleura, by tumors, abscesses, etc., it is by manual examination that the fact can generally be best determined.

"When obstruction exists in the valves, a trembling motion or 'purring tremor' is frequently communicated to the hand, and the tumultuous action, or trembling motion, existing in the more advanced stages of disease in the heart, can often be best appreciated by palpation." (H. M. Hughes.)

III. Percussion.

A casual examination of the different works on this subject is amply sufficient to cause total confusion in the mind of the beginner, and a loathing of the task of wading through such contradictory assertions of the different authors. For whilst the one pretends to hear the grass grow, and to find out every little nook and hook in the lungs, if wrong, by knocking, another asserts coolly, that such talk is a mere flatulent phraseology, referring simply to the fact that the most skilled and experienced in this knocking art themselves confess of having made the most glorious mistakes.

What are we to do then in such perplexity? Shall we throw the whole overboard, as a fashionable craziness of the profession? It would be a short process of getting rid of the trouble. But then, that is not the thing. There has been so much labor and ingenuity bestowed upon this subject, that there must be some guiding truths in this heap of collected experiments and researches, no matter how badly mixed with contradictory assertions.

In the following pages I shall try to state the fundamental principles, by which we must be guided in the application of this kind of examination.

There is an *immediate* and a *mediate mode* of percussion. It is *immediate* when the finger of the examiner strikes directly upon the parietes of the chest. It is *mediate* when some solid material, such as a disc of wood or ivory, a piece of leather, or the finger of the left hand, is interposed between the parietes and the striking body.

The striking body may be *one* or *more fingers* pressed together and bent slightly, or a little steel hammer, whose head or striking surface is covered with leather or caoutchouc.

In regard to the merits of these different modes I have to say that much depends upon what we may have got accustomed to; still the one or the other may be preferable under certain circumstances, which practice will soon teach.

What does percussion reveal?

If we strike different things we receive different sounds. There is, however, a marked difference between those bodies which contain *air* and such as do not. As extreme examples of this difference we may cite the sounds which we obtain when we percuss

the *chest* or *stomach*, and when we percuss the *thigh*. In the first case we obtain a sound which *reverberates*,—has *resonance;* whilst in the other case we hear a mere noise, a clap, without any resonance or tone whatever. This latter, which we may call the *dull, dead* or *fleshy sound*, is everywhere the same, where we strike upon an organ not containing air; such as the liver, the spleen, the kidneys, hepatized lung, or lung completely deprived of air by compression and fluids; a hard liver yields the same sound as a soft liver, a hard spleen as a soft spleen.

But it is different with such organs and bodies *as contain air;* there the sound varies quite considerably. Take for example an open jar or bottle, and percuss it at its mouth, you will hear a sound similar to that of a drum; this is the sound which Skoda has called the **Tympanitic sound**, and which we also might call *drum sound*. Its variations are as follows:

1. If we percuss an open jar or bottle, this drum sound will be *deeper*, the *higher* or *longer* the bottle or the column of air which it contains; it will be *higher*, the *shorter* the column of air is within.

2. If we percuss an open jar or bottle, we find that the *wider* the mouth of the vessel, the *higher* is its tympanitic tone; and, the more we contract the mouth of the vessel, the *deeper* becomes this tone. In short, it depends on the volume of air which is set into vibration; a *larger* volume gives a *deeper*, a *smaller* gives a *higher* tone.

3. If we, however, percuss *closed cavities*, there comes into consideration another momentum. A drum or jar, whose mouth is closed tightly with a piece of bladder, can exemplify it. We perceive at once that the *tenser* the skin is drawn over the drum or the bladder over the jar, the *higher* becomes its tympanitic tone, and *vice versa*, the *looser*, the *deeper*. Here, however, it must be remarked, that this comes to pass only when the surrounding air and the air within, is of equal density and expansion. As soon as either is set out of that equilibrium, just as soon the tympanitic sound is lost, because this diversity hinders the regular vibrations of the membrane, which are necessary for the tympanitic sound.

Thus we find that the tympanitic sound varies in height and depth of its tone. It becomes *higher* in the ratio—

1. That the column of the percussed air is shorter;

2. That the mouth or aperture by which the percussed air ands in connection with the external air is wider; and

3. That the enclosing membrane is drawn tensely over the cavity.

It becomes *deeper* in the same ratio—

1. That the column of the percussed air is longer;

2. That the mouth or aperture by which the percussed air is in contact with the external air is narrower; and

3. That the membrane which closes the vessel is looser.

Applying these physical rules to the living organism, we come to the following results:

1. *The tympanitic sound is heard at the larynx.* The *wider* the person under examination opens his mouth, the higher is its tone; in closing the mouth it becomes deeper and weaker, and when closing the nostrils also, it becomes still deeper and weaker.

2. *The tympanitic sound is heard where there exist superficial cavities in the lungs which contain air.* If it happens that such cavities are in immediate connection with the trachea, larynx and mouth, by means of large bronchial tubes, then we have the same phenomena in opening and shutting the mouth, as above detailed. In opening the mouth the tympanitic sound has a *higher*, and, when shutting it, a *deeper* tone. If the cavity is in no such connection, then opening or shutting the mouth does not alter the tympanitic sound.

3. *It is heard on the thorax in all those conditions of the lungs in which the external air presses equally strong within upon the substance of the lungs, by means of its air-cells and bronchial tubes, as it does from the outside upon the thorax;* that is, *where there is a perfect equilibrium between the pressure of the internal and external air.* This, however, in a normal state is never the case. The inner pressure of the air is like the external, *minus the contractility of the pulmonary tissue.* But disease may deprive the lung-tissue of this elasticity and contractility by compressing it, whereby this equilibrium becomes established. This, we find, for example, in partial emphysema, in the neighborhood of infiltration, as happens in pneumonia, where, not unfrequently, the tissue around the hepatized portion, and especially at the borders of the lung, is emphysematous, and also during pneumonia, as long as the air-cells are not infiltrated, but have lost their natural elasticity. In these conditions, we hear a decided tympanitic sound, whilst in pneumothorax—a collection of air or gas in the pleural sac—we hear none. Especially is this the case when the thorax is much distended; although we might be inclined to expect it more then,

than under other conditions. We hear it again distinctly and invariably at *the upper portion of the chest, when the lower portion of a lung is entirely compressed by a pleuritic effusion and its upper portion is reduced in volume.*

4. *The tympanitic sound is heard lastly in those parts of the chest in whose neighborhood the stomach lies,* namely, in the lower part of the left mammary, left lateral, and left infra-scapular regions, *provided* the stomach be not too much distended with air; because otherwise a regular vibration of its walls, and hence the tympanitic sound, would be impossible.

The same is true of the abdomen; and thus we come directly to the following result: *The tympanitic sound on percussion is heard at the larynx; at the collapsed or compressed lungs; at the relaxed stomach, and at the compressible abdominal walls.*

Quite different from this tympanitic sound is another sound elicited by the percussion of bodies containing air: the **Non-tympanitic sound of Skoda,** which we might perhaps more intelligibly call *the resonant sound of the lungs,* or, by abbreviation, the *lung-sound.* The best example of this sound is obtained by percussing a healthy thorax; and, in doing this, we perceive at once that there are different degrees of resonance in it. It varies in clearness from a very resonant to a muffled sound; and, in duration, from a long resonance to a short snap.

In the normal state of the lungs we find this sound *very resonant* in the superior sternal, the axillary, and the upper part of the infra-scapular regions; *resonant* in the subclavian, the upper part of the mammary, and lateral, and inter-scapular regions; *muffled* in the acromial, and the lower part of the right mammary, and lateral, infra-scapular, and scapular regions; *dull, dead, fleshy* in the inner edge of the left mammary (where the heart lies), and in the regions of the liver, spleen, and kidneys.

Pathological altered states of the lungs alter also this natural resonance of the percussion sound.

It is **Muffled, dull—**

1. On any portion of the lung which is deprived of air, if it is, at least, the size of a half-dollar, and about half an inch in thickness.

2. In the subclavian regions from tubercular infiltration.

3. In the inferior posterior regions, as the favorite seat of pneumonic hepatization; other parts not excluded from the same cause.

4. Diffused over a considerable portion of the chest in hæmorrhages and destructive processes within the substance of the lungs.

5. In malignant diseases of the lungs, where the pulmonary tissue is pushed aside and the air is excluded from the parts affected by cancerous or fungous growth.

Diseases of the *pleura* cause a *dull percussion sound*—

1. "In pleuritic effusion, no matter whether the fluid be blood, serum or pus. The dulness in either case may, and generally does, primarily, affect only the lower part of the serous cavity, gradually extending upwards as the fluid increases, and by its increment displacing the lung. But it may also, on the contrary, in either case, extend over only a limited space, to which it is confined by previously existing pleuritic adhesions.

"When the pleura is free from such adhesions, the fluid, from whatever part of the membrane it proceeds, may in each case gravitate to the lowest part of the cavity, and its site may be changed according to the varying position of the patient's body. In each case, therefore, the part in which the dulness is observed may also vary with the change of position. This change in the situation of the fluid and of the consequent dulness, according to the position of the body, is, however, far more common in hydrothorax than in either simple pleuritic effusion or empyema, in which diseases the fluid is much more frequently confined to a limited space by surrounding adhesions, or gravitates with less facility." (H. M. Hughes.)

2. "*In malignant disease of the pleura*, as in that of the lung, the pulmonary tissue is pushed aside, and dulness and resistance exist on percussion commensurate with the extent of the solid deposit." (H. M. Hughes.)

The **Metallic ringing percussion sound.** This is the same sound which we elicit by striking empty or nearly empty vessels. The presence of water is not required, but does not hinder its production. According to Wintrich it originates in smooth cavities, where the vibrations of the sound are reflected from wall to wall in a regular manner. It is heard in pneumothorax, over large cavities, and such cavities as are connected with each other, whose walls must be fit for the reflection of sound; that is, they must be smooth and curved.

The **Cracked pot sound** is similar to the metallic ringing sound, only not so perfect—a spoiled metallic ringing. It may be produced on any healthy chest by knocking forcibly with the fist

against the sternum during loud speaking or singing. It is said to be found where cavities exist, but Wintrich says: "It is rather a feeling of disappointment for the physician, when he stands by the deceased body of a patient during whose illness he many a time observed this sign and diagnosticated a cavity in his lungs, and yet does not find now any thing the like." For this reason we cannot attach a pathognomic meaning to this sound, as it expresses only general physical conditions.

IV. Auscultation.

You may auscultate a patient either by applying your ear immediately to his chest, or by interposing a stethoscope between it and your ear. The first is called *immediate* and the latter *mediate auscultation*.

Much has been said in books about the superiority of each method over the other; but there is no need of such long disquisitions. I hear best with the naked ear, and so will any one else who faithfully tries both methods. But I prefer the stethoscope decidedly, if I have to examine an unclean person, or a person with skin disease, or in cases where great delicacy must be observed, or when I cannot easily apply my ear to the parts to be examined.

There has also been a great talk in books about the form and material of the stethoscope. It is all the same, whether it be made a little shorter or longer, straight or bent, out of one piece or of several pieces of wood or metal, if only its bore be smooth and adapted to conduct and reflect the sound perfectly. That is all that is required.

In order to know any thing about abnormal sounds in the respiratory organs, we must first become acquainted with those sounds which we can hear in a normal state of these organs.

The Normal Sounds of Respiration.

They must be distinctly considered as *inspiratory* and *expiratory sounds*.

The **Inspiratory** sound heard at the *larynx*, *trachea* and *large bronchial tubes* may be imitated by forcing air against the hard palate, as is done involuntarily in hard breathing, or in pronouncing the guttural consonant *ch*. The height or depth of

this sound (its pitch) depends upon the width of the opening through which the air passes. This sound is called **Bronchial respiration** or **Tubular breathing**, and is found in a normal state at the larynx, trachea, large bronchial tubes under the upper part of the sternum, the inner side of the subclavian, the inter-scapular regions, and occasionally, though less distinctly, in the axillary regions, especially the right one. It is loudest in the larynx, less loud at the trachea, and still less loud at the superficial bronchial tubes, sounding as if coming from a distance. If this bronchial or tubular breathing be heard in other localities than the above-named, it may, with tolerable certainty, be regarded as morbid.

An altogether different sound is heard during *inspiration*, when we put the stethoscope upon any other part of the chest than those previously specified. It may be imitated by narrowing the opening of the mouth and then drawing in the air. The consonant of this murmur is *v* or *b*, and it is called the **Respiratory** or **Vesicular murmur** *of the air-cells and finer bronchial tubes.*

"It varies considerably in intensity in different regions of the chest. It is most distinct in the *acromial, the central and lower part of the superior sternal, the subclavian, the axillary* and the *subscapular regions.* It is less distinct in the lateral, the right mammary, the scapular regions, still less in the hypochondriac, and least of all in the inferior sternal and the inner part of the left mammary region.

"Independently of the variation of the intensity of the sound in the different regions of the chest, whether the variation arise from the position of the organs, the amount of pulmonary tissue beneath the ear, or the facility or difficulty with which the inspired air reaches the pulmonary cells, the two sides of the chest frequently vary a little in respect to the loudness of the respiratory murmur. Thus it is rather louder in the acromial, scapular and infra-clavicular regions of the *right* side, but in so slight a degree as to be scarcely worthy of consideration in a practical point of view.

"The respiratory murmur may, both locally and generally, be more or less loud than natural in persons who are quite free from any appreciable disease. It may also be harsh or rough, scarcely audible, or altogether absent. Thus, in childhood and in youth, the respiratory murmur is louder than in adult life, and especially than in old age. From this circumstance a loud inspiratory murmur is called (whether normal, as in childhood, or

youth, or abnormal, from any cause, in age) *puerile* or *supplementary respiration: puerile*, because it is the normal state of respiration in children, and *supplementary*, because it is thought that when one lung or a part of a lung is disabled, the increased activity of the other lung, or another part of the same lung, *supplies* the defective action of the diseased organ or part.

"It is always heard when the healthy respiration is more than ordinarily active, as in persons 'out of breath,' as it is called, from strong exertion, as running, dancing, etc., or after the respiration has been voluntarily suspended for a time, and the individual breathes quickly to restore the normal balance of the circulation through the pulmonary organs; we hear it, therefore, also after the sudden termination of an asthmatic paroxysm. The strength of the inspiratory murmur, instead of being *increased*, may be *diminished*, though no disease exist in the chest. This imperfection of the respiratory murmur is usually observed either in parts of the lungs which have been little used, as in the lower regions of the chest of females accustomed to tight lacing, or in persons suffering from deformity, whether congenital or acquired; or in the chest of persons considerably advanced in life, also after long illness when the patient for a long time has been obliged to lie on his back. In the first two and last instances the defect results from *want of use* and consequent *imperfect expansion* of the lung. In the case of deformity it proceeds from *atrophy* and consequent defective *functional activity* of the pulmonary tissue. It may, indeed, be regarded as the natural character of the respiratory sound in old people, and may therefore be called '*senile*,' as that existing in children is termed '*puerile respiration*.'

"Occasionally the inspiratory murmur is entirely absent from one or a part of one lung, though *no* disease be present in the organ itself. This condition, however, probably never exists without some mechanical obstruction to the ingress of air, either in the air-tubes or upon the exterior of the organ (spasm, foreign body, apparent death)." (H. M. Hughes.)

The murmur of expiration in the normal state of the respiratory organ causes little or no sound in the air-cells and finer bronchial tubes; whatever sound is heard differs from the murmur of inspiration, and resembles rather a gentle aspiration or blowing. It can be imitated only by the mouth during expiration; the

consonant which represents it falls between *f* and *h*. In the larynx, however, it is louder than the inspiratory murmur.

Laennec and Skoda attribute the sound of the vesicular breathing to the friction of the air against the walls of the finer bronchial tubes and the air-cells, the contractile power of which it has to overcome. The reason why the *inspiratory* murmur of the air-cells is much louder than the *expiratory* is, that the air, when it enters into them, meets with resistance from their contractibility, but does not meet with any in its passage out of them. It is otherwise, however, with the large bronchial tubes, and particularly with the trachea and larynx; here the air, during inspiration, meets with no opposition; it has, indeed, rather a tendency to expansion; but during expiration the stream of air coming from all parts of the lung out of the air-cells, collecting in the trachea and larynx, becomes compressed and causes friction on the walls of this tube, and especially in the narrow glottis; hence, the *expiratory* murmur of the *larynx, trachea* and *large bronchi* is, as a rule, *louder* than the *inspiratory*.

Pathological Deviations from the Normal Vesicular Respiration.

1. The inspiratory murmur. The *presence* of the vesicular murmur at any part of the thorax indicates the entrance of air into the air-cells of that part of the lung which lies beneath the spot auscultated. Its *absence*, therefore, indicates those abnormal conditions which prevent the passage of air into the air-cells; such are *compression of the air-cells* by exudations or tumors in the pleura; by enlargement of the heart and other diseases; *infiltration of the lung tissue* by plastic or tuberculous matter, by blood, serum, pus, etc.; *atrophy of the air-cells and obstruction of the bronchial tubes* by mucus, blood, or by swelling of the mucous membrane.

The vesicular murmur becomes *harsher*, when the lining membrane of the air-cells and finer bronchial tubes is roughened, swollen, and thickened. The presence of a *harsh* vesicular respiration, which may amount sometimes even to a *hissing sound*, indicates, therefore, *a swelling of the mucous membrane of the finer bronchial tubes and air-cells*, as exists in catarrh; or *solitary tubercles thickly scattered through the tissue of the lungs;* and *œdema of the lungs.*

2. The expiratory murmur. In a healthy condition of the lungs

it is very soft and somewhat shorter than the inspiratory murmur, sometimes scarcely audible. Its abnormal conditions are, therefore, *harshness* and *prolongation*. The causes hereof must be sought in a roughened and narrowed condition of the finer bronchial tubes and air-cells, by which greater friction of the egressing air is produced.

This *prolongated* and *harsh* expiratory murmur is rarely heard extending all over the lungs in a uniform manner, but is mostly confined to portions of the lungs, and then is of the highest diagnostical importance.

If it extends over a *large* surface of the lungs, it indicates a more generally swollen and uneven surface of the bronchial mucous membrane; as we find in acute and bronchial catarrh, with or without emphysema. If it, however, is confined to the *apex* of the lungs, between the first and third ribs, and more in front than behind, and more on one side than on the other, it indicates *tuberculosis*.

Dr. Jackson, of Philadelphia, was the first who, in the year 1832, drew attention to this prolonged, harsh, and partial expiratory murmur, as a sign of tubercular infiltration, and it has been confirmed by a number of authors since.

This prolonged, expiratory murmur is sometimes broken into two or three jerks, and is observed in tuberculosis; also in old people and children when frightened; also during the chilly stage of fevers. The inspiratory murmur also exhibits such interruptions. It is necessary to listen in such cases to the larynx, whether the interruption is heard there too, otherwise it might easily be mistaken for a friction-sound of the pleura.

3. Bronchial respiration. When we auscultate the larynx or trachea, the respiratory sound is louder than in any other part of the chest, if it be in a healthy condition. It may be imitated, as said before, by forcing the air against the hard palate, so as to produce the consonant *ch*, guttural. This respiratory sound has been termed *bronchial respiration*. If heard in any other part than that above specified, it denotes a change in structure, which subdues the vesicular breathing, and serves as a good conductor of sound from the larger bronchial tubes. Such conditions are: *hepatization and tubercular infiltration* (the most frequent); next in frequency, *thickening of the bronchial tubes, with atrophy of the lung tissue; pulmonary œdema and pleuritic effusions; and hydrothorax.*

4. Rhonchi or rattling noises in the respiratory organs. When the

bronchial tubes are partly constricted, or when tough mucus exists therein, which is set into a vibratory motion by the rush of air during respiration, or, if sticking tightly to the walls, is suddenly torn, then we have all sorts of noises within the thorax. Such noises may sound high, deep, clear, husky, harsh, or hollow; may be short like a snap, and return at intervals; or be continuous for a longer time, like the purring of a cat.

"These noises," says Dr. Wintrich, "have been called, funny enough, *dry rattle noises*, and have been divided into rhonchi sicci, graves, sonori, sibilantes and canori. The poetical talent of some authors has had ample opportunity to force them by comparison into the most singular and fanciful classes, by which a cool reflection has mighty little to think," and, I may add, by which the beginner is thrown into utter confusion. They originate within the respiratory tubes, exactly in the same manner as sounds originate in any other kind of tubes. The sound is *high, shrill*, when the tube is narrow or constricted in one or more places; it is *deep*, when the vibrating column of air is long, or when the vibratory undulation is slow; it is *loud, strong*, when the stream of air is of great force; and *vice versa*, it is *weak, faint* when the stream of air is weak.

These ronchi often extend over a large portion of the chest; if *deep*, they occasion a vibration of the thoracic walls, perceptible to the touch; if *high*, not. Still we cannot, as has been mentioned already under the head of vocal fremitus, from its extension, draw any conclusion as to the extension of its cause, because this sound may be propagated, like the fremitus, from a single point where it originates to all parts of the chest.

These rattling noises generally have their origin in catarrhal affections, and change constantly according to the location and the different nature of phlegm, which is shifted from one place to another by breathing and coughing. Exceptions to the above are *hissing sounds*, which sometimes exist continuously for weeks, and even months. These hissing sounds, or *rhonchi sibilantes*, must have, therefore, a more persistent cause, the nature of which seems to be a constriction in some of the finer bronchi; and we find them in such a persistent manner only in tuberculosis of the apices of the lungs.

The so-called *moist sounds* are thought to originate in the presence of a fluid, which, by the rush of air, is stirred up into large and small bubbles, which burst. We may distinguish the following varieties:

1. **Rhonchus crepitans,** *vesicular crepitation,* or *crepitant rattle.* It is quite similar to the noise which is produced when a lock of hair is rubbed between the fingers. *It is heard only during inspiration.* Laennec and all his followers, even Skoda, explain it in this way: that the rush of air during inspiration into the finest bronchial tubes and air-cells, if they contain a fluid, stirs this fluid into bubbles, which burst and thus cause the crepitant rattle. Already Walshe, an English author, was not satisfied with this explanation, and according to his opinion it originates through the sudden expansion of the interstitial spaces *around* the air-cells by a full inspiratory action. He thought these interstitial spaces glued together by the exudation of a tough matter in pneumonia, so that a sudden expansion would tear them asunder and cause this crepitation. This opinion of Walshe has already been refuted by Davies in his lectures, who says, that in pneumonia the exudation does not take place *outside* but *inside* of the air-cells, as the tough sputa sufficiently show, and that the same crepitating sound is also found in œdema of the lungs. Dr. Wintrich gives, no doubt, the best explanation of this sound. He says: "This crepitating sound is nothing else but the noise which is caused by the sudden inspiratory expansion of the air-cells and finest bronchial tubes when their walls have become glued together by means of a sticky exudation." It is therefore not heard in a sound lung, because here the air-cells, even during the fullest expiration, never contract to such an extent that their walls touch each other and stick together. Wherever it exists, there is a morbid swelling and tough secretion within these air-cells and finest bronchial tubes, which bring their walls during expiration in such near contact that, by means of a sticky secretion within, they are glued together and torn asunder by the following inspiratory action.

The intensity of this crepitation depends upon the toughness of the secretion and upon the force with which inspiration tears the adhering walls asunder. It does not cease after coughing and expectoration, because it depends upon a swelling and secretion of the air-cells and finest bronchial tubes, which no cough can remove. It is heard at *the commencement of pneumonia,* just when exudation takes place, and *at its resolution; in capillary bronchitis,* and *in œdema and sometimes in emphysema of the lungs.* In œdema the crepitant rattle is much softer and distant, because the transudation is of a much less sticky nature than in pneumonia or bronchitis.

It is heard, lastly, in *sound lung* under the following condition, as Walshe describes it: "If individuals whose lungs are healthy, or diseased only at the apices, and whose breathing is habitually calm, are made suddenly to respire deeply, a *peculiar, fine, dry crepitation, accompanying inspiration only*, may often be detected at the basis posteriorly. But after two or three, or, at most, five or six acts of respiration, it totally disappears. This pseudo-rhonchal sound seems to depend on the sudden and forced unfolding of air-cells, which are unaffected by the calm breathing habitual to the individual; and its only importance arises from the possibility of confounding it with crepitant rhonchus."

It is frequently heard in patients who have lain long on their backs, especially after typhoid fevers, and may be explained in the same manner. The pulmonary secretion collects mostly in those places which lie deepest and are used least. By these means the air-cells gradually collapse and stick together. A few deep inspirations tear them asunder and at the same time remove the secretion, so that, as there is no morbid swelling in these parts, the crepitant sound ceases after two, three, or, at most, after five or six acts of respiration.

2. **The subcrepitant rattle.** This is a sound which appears to arise from the bursting of very small bubbles in the air-passages. It is heard most distinctly during the act of *inspiration*, weaker during expiration. It denotes a fluid secretion in the finer bronchial tubes.

3. **The mucous rattle.** There is sometimes a great deal of mucus in the respiratory organs; and yet, on auscultation, no rattling sound is perceptible. It seems, then, that certain conditions must exist in order to render the bursting of large and small bubbles in the air-passages audible. These conditions are: that the walls, wherein the sound originates, must be good reflectors of sound, like the larynx, the trachea, cavities, and bronchi, if they are surrounded by walls which do not contain air; and also, that fluid (mucus, pus, blood, serum) be contained in them, which, by respiration, is set into bubbling motion. This mucous rattle varies very much in character; is a sound of large or small bubbles, high or deep in pitch; confined to a small spot, or extended over the whole lung. By the extension of the sound we can never judge of the extent of the fluid which gives rise to it; because this sound is propagated quite a distance from its origin,

if there exist good reflecting media. It therefore does not indicate any particular disease, but only certain conditions, like *consolidation* of the lung tissue, either by infiltration or hepatization, compression or atrophy.

4. The metallic tinkling. "When, in consequence of a communication with a bronchial tube, or a portion of the lung, the pleural sac contains a considerable portion of air, and also a small quantity of fluid, or when a phthisical cavity of large size is similarly circumstanced, there is every now and then heard a very peculiar sort of tinkling noise upon examining the chest. It resembles very nearly the sound caused by shaking a pin in a decanter. This is the *metallic tinkling*. It is, most commonly, heard only at intervals; that is, it may occur once in three, four, or forty respirations. It rarely, if ever, attends the expiration. It may cease altogether, and reappear after a considerable time. In this respect it seems to be influenced by the position of the patient's body. It is most probably produced by the continued and rapid reverberation of a delicate sound against the firm and vibrating walls of a large cavity. It is in fact an echo in a small space. The original sound from which the echo proceeds appears most commonly to arise from the bursting of a bubble of air, or from a drop of liquid falling upon the surface of fluid in the bottom of the cavity. But it sometimes seems to be likewise produced by the passage of air over a loose portion of *membrane* or *thick secretion* situated in a tube at or near the entrance of the cavity. The physical conditions necessary for its production appear to be a large cavity with resonating walls, and containing a large portion of air, with a small quantity of fluid." (H. M. Hughes.)

In pneumothorax much depends upon the position of the patient. Often, when nothing can be heard while the patient is lying down, the *metallic tinkling* appears at once on assuming the sitting posture. In those cases in which tubercular infiltration extends to the diaphragm in the left lung, it not unfrequently happens that sounds within the lungs are conducted into the cavity of the stomach, where they cause exactly the same metallic tinkling. Any one, who is not aware of this fact, might easily diagnosticate pneumothorax where, upon post-mortem examination, none could be found.

Another practical and interesting sound is

5. A sort of click, which is heard occasionally, perhaps not oftener than once in four or six inspirations, resembling the

sticky noise produced by the removal of the tongue from the roof of the mouth. It is generally observed at the apex of the lungs, when there is a deposition of tubercles, and, according to Wintrich, especially when these tubercles commence to dissolve. Cough sometimes breaks it up; but often it is of a very persistent nature.

6. Friction sound. This sound originates when both pleural surfaces (pleura pulmonalis and costalis) become roughened and, in the absence of gas, fluids, or adhesions between them, rub upon each other. It generally accompanies both inspiration and expiration; being at one time most distinct during inspiration, at another during expiration. It may be heard during inspiration only, or the reverse. It resembles the creaking of leather; appears at intervals, and in most cases it is recognizable by the finger as well as by the ear, and the patient generally experiences the sensation of something rubbing within his thorax. This sound is most commonly caused by *pleurisy and pericarditis.* It is sometimes heard at the commencement of this disease, when fibrous deposits have settled on the surfaces of the pleura, and the contact of the surfaces is not prevented by serous effusions. It is also heard, and sometimes more distinctly, at a later period of the disease, when absorption of the serous effusion has taken place, and the surfaces, covered by a firm plastic exudation, have once more come in contact. In this case the friction sound continues until either the pleura has formed adhesions to the thoracic walls, or its surfaces have become perfectly smooth. It is also heard in *tuberculosis;* especially in the *left* infra-clavicular region, where it continues to be sometimes for months, even years; because tuberculosis is more or less always attended by partial pleuritic inflammations. Here, however, it must not be confounded with the above-mentioned *interrupted* or *jerk-like expiration.* Both may easily be distinguished, as already stated, by listening to the larynx. If heard there too, it is no *friction sound,* but *interrupted expiration.*

Auscultation of Voice.

The voice, as heard in a normal condition of the respiratory organs. If the stethoscope be placed upon the larynx of a healthy person, and we listen through it whilst the person is talking, his voice sounds nearly as loud as though he were talking immediately

into our ear; but the words are not so clearly articulated. The same is true if we place the stethoscope upon the trachea. This normal sound, heard at the larynx and trachea during talking, has been called **Laryngophony** and **Tracheophony**—laryngeal voice and tracheal voice.

If the stethoscope be placed upon the upper part of the sternum, or upon the cartilages of the second and third ribs, or upon the inter-scapular regions, we may still hear his voice when he speaks, but much less loud, and the words will be still less clearly articulated than on the larynx and trachea. This normal sound of the voice, as we perceive it over the larger bronchial tubes, is called **Bronchophony**—bronchial voice.

If, lastly, the stethoscope be put upon any other part of a healthy person's thorax, the voice of the person is heard simply as a buzzing or humming, or is not heard at all.

Such then are laryngophony, tracheophony, bronchophony and the distant humming or buzzing of the voice, when heard over the respiratory organs in a normal condition. It must not, however, be supposed that there exists any defined line of demarcation between each, so that it could be said, here ends laryngophony, and here begins bronchophony. They all gradually merge into each other; they are not distinct species of sounds, but merely variations of intensity of the same sound. We may convince ourselves of this *gradual lessening* of intensity and clearness of articulation, if we gradually move the stethoscope from above downwards, and listen at the same time, whilst the person is talking.

Further, it must be remarked and borne in mind, that the thoracic voice is very generally more distinct upon the *right* side, and particularly below the right clavicle and over the right scapula, than in the corresponding situations upon the left side; also, that a shrill or acute, high-toned voice, generally sounds clearer and more distinctly modulated than a deep base voice, though not so loud and strong as this; and that the thoracic voice is usually more audible in thin persons than in those whose thoracic walls are loaded with fat; and in persons with contracted chests, than in those in whom the thoracic cavity is largely developed; and, other things being equal, it is also more distinct in females than in males.

The voice as heard in abnormal conditions of the respiratory organs. Pathological changes and conditions multiply these variations

in intensity and articulation of the voice still more. We will frequently have to make nice distinctions, and this is only possible, if we compare constantly both sides and different parts with each other, for it rarely ever happens that both lungs should be alike affected. Thus, in listening to the sound portion we obtain a standard by which we are enabled to judge of the corresponding portion. There is a threefold alteration of the thoracic voice from its normal condition possible: it is either—1. *Decreased in its intensity or suspended altogether;* or, 2, *Its intensity and clearness of articulation is augmented;* or, 3, *It is changed altogether in its character.*

1. **Its decrease** is caused by any and all such solid, fluid or gaseous substances as may form between the lungs and thoracic walls, and which interfere with the transmission of the natural humming or buzzing of the voice on those parts of the thorax mentioned above. This is the case in moderate effusion of lymph or pus into the pleural sac, and in moderate pneumothorax, as far as it separates the lungs from the thoracic walls. It is the case in widely-extended emphysema, if the bronchial tubes are not widened and thus made good conductors of sound. It is the case, where large cavities, as it were, swallow up the sound. It is quite important that all this be borne in mind, lest we might make mistakes.

The natural thoracic voice is *entirely subdued*, when massive exudations and transudations in the pleural sac cause a separation of the thoracic organs from the thoracic walls. The same is produced by pneumothorax, if it does not cause metallic tinkling. The most *total suppression*, however, of the thoracic voice is caused by the closure of the bronchial tubes, either by foreign bodies, tough mucus, large quantities of pus, phlegm, or serum, etc. The higher up towards the larger bronchi such stoppage exists, the larger is the circumference in which the natural thoracic voice is wanting.

2. **Its increase** *in intensity as well as in clearness of articulation.* At first I have to remark, that in no case of morbid affection, and on no part of the thoracic cavity, does the voice sound so loud as at its origin, the mouth. But it may sound as loud, or nearly as loud, as we hear it in a normal condition at the larynx. This increase of the thoracic voice we may call **Laryngophony** French authors have called it **Pectoriloquy**, which means a speaking out of the chest. If it exists in a degree, as on those places,

where the larger bronchial tubes lie, near the thoracic walls, it is called **Bronchophony.** Neither pectoriloquy nor bronchophony are always of the same strength or loudness, and therefore the authors speak of a perfect and an imperfect pectoriloquy, and of a loud and a weak bronchophony.

The question arises, what causes this increase of the thoracic voice to bronchophony and pectoriloquy in places where there should naturally exist only a humming or buzzing of the voice?

The answer is: *This increase of the thoracic voice depends entirely upon a greater or lesser degree of aptness of the bronchial tubes to reflect and conduct sounds*, or, as we remarked of vocal fremitus, its increase depends upon good conductors of vibratory motion. This aptness of the bronchial tubes grows in the same degree as their walls become tenser and more solidified, approaching in consistency the walls of the trachea and larynx; and further, when these tubes are surrounded by fluids or semi-solid exudations (as in pneumonia); or even by solid masses (as in tuberculous infiltrations); or when the substance of the lungs around them has become compressed, and thus deprived of air. All these requirements for an increase of the thoracic voice we find more or less realized in the following pathological conditions: In *tubercular infiltration*, if it surround several bronchial tubes up to their last extremities (this is of the most frequent occurrence); in *pneumonic infiltration*, where the semi-fluid or coagulable exudation causes hepatization of the substance of the lungs; in *strongly-developed œdema*, especially of interstitial lung tissue, and this only in rare cases; in *dilatation of the bronchial tubes*, if surrounded by indurated and shrinking, airless lung tissue; *in tumors of all kinds*, if they compress the lung tissue, or by their own nature and situation around the bronchial tubes become good conductors of sound; in *all kinds of fluid exudations* into the pleural sac, pleuritic exudation, hydrothorax, hæmothorax, empyema, etc., when they compress the lung to such a degree that the peripheric portions of it become deprived of air—in such cases, however, the lung must not be pushed too far from the parietes of the thorax, as, for example, during the period of dilatation in pleuritis, in which, in the majority of cases, no sound is heard at the corresponding wall of the thorax; in *cavities*, which stand in unbroken connection with the larynx, trachea, and larger bronchial tubes, which have smooth walls that are good reflectors, which are neither too large nor too small, and which are situated so near to

the periphery that but little previous lung tissue intervenes between them and the thoracic walls—the nearer they are to the periphery and the tenser and harder their walls, the greater is the intensity of the thoracic voice heard over them.

This increase of the thoracic voice in consequence of these pathological conditions over parts which, in a normal state, afford only a humming or buzzing of the voice, has been called, as already stated, according to its degree, weak or loud bronchophony, and imperfect or perfect pectoriloquy. Bronchophony has always a kind of *nasal twang*, is never so clearly modulated as sounds or words which come immediately from the mouth.

3. The thoracic voice is changed in its character. Such a peculiar deviation from bronchophony is the so-called *ægophony*, a tremulous sound, which resembles the bleating of a goat, and which is nothing but a modified bronchophony, with the nasal twang of quick, successive, tremulous interruptions. (Wintrich.) It is heard sometimes without any pathological change, in old people, if their voice has become of a trembling character. Otherwise it is found under conditions similar to those which produce bronchophony, and does not designate any particular condition or disease. It corresponds to the cracked-pot sound.

Another deviation from bronchophony is *the cavernous voice*, which is well modulated, without nasal twang or goat-bleeting. It originates in moderately large cavities, which are situated near the thoracic wall and adhere to it; which have thin, smooth walls, capable of good reflection; which are, by the larger bronchial tubes, in uninterrupted connection with the larynx and trachea, and which do not contain too much fluid.

If these cavities are large, another deviation from mere bronchophony is occasioned, which is spoken of in books under the name of *emphoric echo and metallic tinkling*. These phenomena may be imitated by a person speaking and directing his voice into a jug. When he does so, a peculiar humming is heard in addition to the voice. Besides this humming, there is also occasionally heard a metallic after-tone, both of which represent what Laennec describes under emphoric echo and metallic tinkling. It is produced in tolerably large cavities, and also sometimes in pneumothorax.

Auscultation of Cough.

As cough is nothing else than a loud and forced expiration, it is clear that all which has been said about respiration and voice

is likewise applicable to the cough. It is heard weaker or louder under the same conditions which decrease or increase the sound of respiration and of voice. In some cases it may make some of the auscultatory signs clearer and more distinct, and thus far it may be a help to a more accurate diagnosis.

Special Diseases of the Respiratory Organs.

Having thus far explained, step by step, the phenomena which respiratory action, in normal as well as abnormal conditions, offers to the senses of *sight* (inspection), *touch* (palpation), and *hearing* (percussion and auscultation), we now come to consider *certain forms of abnormal conditions* of the respiratory organs which occur again and again; and although varying constantly as individual cases, present, nevertheless, some common, persistent features by which they may be arranged, considered, and recognized as definite and marked forms of pathological alterations and conditions in these organs. What we have learned concerning the respiratory action in normal and abnormal conditions, we shall now have occasion to apply to certain diseases, and in this way demonstrate its practical use.

a. AFFECTIONS OF THE BRONCHIAL TUBES.

Bronchitis, Bronchial Catarrh.

This, like all catarrhal inflammations, is characterized by a hyperæmic state of the mucous membrane in the bronchial tubes, causing abnormal secretions, and if long continued, gradual changes in their texture. The membrane appears injected, ecchymosed, infiltrated, opaque, swollen, and covered with secretion. In this way the finest tubes may become entirely closed, preventing the renewal of air in the air-cells, and causing a poisoning of the blood by uneliminated carbon. This generally, however, happens only with infants, who are not strong enough to free themselves of the secreted phlegm. In such cases, during post-mortem examination, the lungs swell out of the thorax, not having room enough inside without being compressed by the parietes of the thorax, because their alveoli remain filled with the inhaled air. In chronic cases the mucous membrane grows hypertrophic, the muscular fibres lose their elasticity, and the

tubes enlarge in width, either evenly throughout, or only in short tracts, sac-like,—**Bronchiectasia.**

The inflammation may be confined to the trachea and the larger bronchi, or to the smaller ones, or be diffused all over. In the first case it is accompanied more or less by a troublesome tickling under the sternum, or a sore feeling or burning; while in the second no such sensations exist, as the finer bronchi are less liberally supplied with sensible nerves than the larynx and trachea. The cough is usually much more violent in the case of inflammation of the larger bronchi; it is most readily excited at the point of biforcation. If the catarrhal inflammation is located in the smaller bronchi, it is always attended with more or less dyspnœa, which, in an affection of the larger bronchi alone, is never found, and for obvious reasons: the swelling and phlegm, if ever so great, can not easily occlude these large tubes, while in the smallest a little swelling and a small quantity of phlegm may easily prevent the undisturbed ingress and egress of air.

The *sputum* is at first viscid, mucous, transparent, poor in cells, often frothy, because mixed with air from the severe efforts of coughing required for its detachment; often it is mixed with small quantities of blood for the same reason; in the spit-cup it is readily confluent and corresponds to the *sputum crudum* of older writers. As the catarrh progresses, more and more cellular elements become freed, and this is a sign that the culmination of the process is passed; the sputum now is richly cellular, non-translucent, and consists chiefly of mucus and pus cells—it is the "*sputum coctum*" of older writers. If the disease enters the chronic stage, the sputa become more puriform, and appear either in greenish or yellowish clumps of muco-pus in a sero-mucous fluid, of which, when poured into water, one portion remains floating on account of the admixture of air, while the rest sinks to the bottom; or the purulent masses run together in the spit-cup of which the heavy portion settles to bottom, the sero-mucous part floats upon it and the whole is covered by considerable froth; this sort of expectoration is often fetid in a high degree; or the sputa consist of roundish, coin-like masses, which lie separate beside each other in the spit-cup; this sort of expectoration is often the product of a cavity in the lungs, but is also observed in chronic bronchitis. At still other times the sputum is sero-mucous, being characterized by its thin, thready consistence, frequently copiously mixed with air-bubbles which cover the entire

surface of the expectorated mass. Its quantity is often very considerable, amounting to actual bronchorrhœa, and is principally observed in the chronic forms of bronchitis. The *ashes* of these various kinds of sputa have been found to contain: Chlorine, sulphuric acid, phosphoric acid, potassa, soda, lime and magnesia, oxide of iron and silicic acid. The same constituents are found in the ashes of the lungs, but their quantitative composition differs greatly. Phosphoric acid, for instance, and oxide of iron are found of much less amount in the sputa than in the ashes of the lungs, whereas potassa exceeds greatly in amount in the ashes of the sputa.

Bronchitis, whether confined to the larger or smaller tubes, is most always attended with *fever*. It generally sets in with *chilliness*, alternating with a feeling of *burning heat*, without a corresponding rising of the mercury when the thermometer is applied. Thus we may already in the commencement of a fever be able to distinguish a catarrhal from an inflammatory fever; the latter, generally commencing with only one chill, is followed by a fever-heat that indicates a much higher degree on the thermometer.

Catarrhal fevers are sometimes epidemic, when they are called **Influenza** or **Grippe**; involving the whole system and especially the mucous membranes, even those of the bowels.

In old people, or otherwise exhausted persons, catarrhal fevers take at times a bad turn, and assume a *typhoid character*. The patient becomes delirious and comatose, his tongue dry, pulse small and frequent, and his person covered with exhausting perspiration. To the comatose state is added at last, a rattling in the trachea from the bursting of big bubbles, which is caused by the inability to throw off the phlegm, in consequence of paralysis of the muscular fibres of the bronchi. This is the so-called death-rattle; after the setting in of which the scene soon closes. This form of bronchitis is termed by older writers **Pneumonia notha.**

Another form is the so-called **Catarrh on the chest of infants**, especially during dentition. It involves the smallest branches of the bronchi, whence it is also called **Bronchitis capillaris.** Its character is the same with any other form of catarrh; but as the swelling attacks the finest tubes, it soon makes them impervious to air, and consequently prevents the expulsion of carbon, and the inhalation of oxygen. Such children are in great distress, breathing heavily, with hissing and rattling noises in the chest. The coughing spells are painful and violent, driving the blood to

the face, and when still further progressing, the epigastric region and lower ribs are drawn in during inhalation, as in croup, a sign that the air-cells are no longer filled by the inspiratory act; so also do we find the supra and infra-clavicular region bulging out, protruding, as the air contained therein is not removed by expiration, and there is consequently a noticeable stillness of the upper part of the chest during expiration.

When such an attack befalls newborn children from their having been exposed to cold by washing, bathing, etc., it sooner develops itself into a higher stage, as the child is too young and too weak to clear away the accumulating secretion by its own efforts. The child turns bluish and grayish; the nose becomes pointed; the eyes dull; and the respiration quite superficial. It is nothing more nor less than a clogging up of the finest bronchial tubes, and, in consequence of that, an overcharge of the whole system with carbon. A superficial observer might confound it with cyanosis from some organic lesion of the heart.

The *chronic forms* of bronchitis differ but little from the acute forms. A chronic bronchial catarrh aggravates usually in spring and fall, and leaves the patient comparatively free through the summer. In some cases where the sputa are very tough, it is attended with painful, straining fits of coughing, in others the cough is much lighter, as the secretion consists of a more fluid and yellowish substance. Very frequently bronchial catarrh is attended with dyspnœa on account of constrictions which, by the chronic inflammation, have been formed within the air-tubes. So also originate by the gradual change of texture of the bronchi, dilatations here and there (**Bronchiectasias**), which in most cases contain masses of puriform sputa of a very fetid odor. In other cases, especially where the catarrhal inflammation is located in the larger bronchi, the expectoration is of great abundance, and consists of a thin, sero-mucous substance, mixed largely with air-bubbles. Such abundant discharge from the air-tubes is called **Blenorrhœa of the Bronchi**, or **Bronchorrhœa.** In some cases there is no great dyspnœa, in others where the inflammation infests the finer tubes, dyspnœa will not be wanting.

A long continuance of chronic catarrh often becomes associated with hypertrophy and dilatation of the right ventricle of the heart. A particular form, the so-called "**Dry Catarrh**" of Laennec, which is associated by severe paroxysms of cough with but a trifling amount of expectoration, is often combined with emphysema.

Physical Signs.—*Percussion* reveals nothing in these affections; its sound is everywhere the same as in a healthy condition.

Auscultatory signs depend upon the condition of the bronchial tubes. *As soon as their mucous lining becomes inflamed and swollen*, the vesicular murmur is loud, harsh, and coarse; the expiratory murmur, usually scarcely audible, also partakes of this character, and may be even louder than the inspiratory murmur. When, however, the inflammation invests the larger bronchial tubes, the vesicular murmur is frequently oversounded by the loud bronchial breathing which originates there; but, when the breathing is slow and weak, there may be, at the commencement of the disease, no sound at all perceptible.

As soon as the mucous membrane becomes covered with secretion, we hear all sorts of mucous rattling, fine bubbling, large bubbling, hissing, and whistling sounds, according to the nature and location of the secretion. When the secretion is located in the larynx, trachea, or larger bronchi, the rattling noise originating here may be heard all over the chest; hence we cannot, from the extent of the noise, judge of the extent of the secretion. On the contrary, the finer bronchi may be filled with mucus, and no rattling noise be perceptible when the breathing is weak and feeble. When, during vigorous respiration, the vesicular murmur is absent, it denotes the presence of a large quantity of mucus, or the closure of the finest bronchial tubes by swelling, which prevents the air from entering into the air-cells. We may also hear the *crepitant* sound, when the inflammation invades the finest bronchi.

In regard to *differential diagnosis*, bronchial catarrh differs from other acute lung diseases by the absence of acute pain—it produces only a sore, raw, and burning sensation; by the absence of all abnormal percussion signs; and by its commencing with frequently repeated chills.

THERAPEUTIC HINTS.—*Catarrh on the chest of infants*, Acon., Bellad., Bryon., Calc. carb., Ferr. phosph., Ipec., Laches., Opium, Phosphor., Sulphur, Tart. emet.

Catarrh of old people, or exhausted persons, Baryt. carb., Bryon., Carb. veg., Hydrast., Laches., Phosphor., Rhus tox., Sepia, Tart. emet., Veratr.

Compare Catarrh of Nose and Larynx.

Acute Forms.—Acon., in the commencement, especially if brought

about by exposure to cold west winds, or sudden suppression of perspiration, with high fever, dry skin, restlessness and irascibility.

Act. rac., cough excited by every attempt to speak, so that one is obliged to desist. (Guernsey.)

Æsc. hipp., when complicated with gouty diathesis, and a tendency to piles with constipation.

Arnica, cough excited in children from crying; sputa difficult to loosen, or bloody.

Arsen., cough attended with dyspnœa; *worse* about and after midnight; from drinking cold water; from lying down; from mental excitement; sometimes attended with cold in head, diarrhœa, rheumatic pains in the limbs, palpitation of the heart, restless anxiety in the night. When coughing a pain extends from the small of back down into the thighs. The cough is excited by an intense tickling in trachea and under sternum, from cold air; it is whizzing with difficult expectoration of frothy, tough sputa.

Badiaga, spasmodic cough, with sneezing and lachrymation; during the paroxysms, crying and pressing hands upon head; sometimes strangling, face turning dark, and thick, yellow viscid mucus flying out of mouth and nostrils. Cough loose A.M., tight P.M. (H. V. Miller.)

Bellad., barking cough; crying when coughing; hot skin, inclined to be moist; drowsy; sleepy, but cannot sleep; starting in sleep.

Bryon., crying when being moved, and when coughing; cough tight, sometimes with blood-streaked expectoration; worse through day, at times worse in the night, compelling to sit up; worse from motion; when entering a warm room; from sudden changes of the atmosphere, either to warm or to cold; from eating and smoking. Pain in the pit of stomach, and in the muscles under the short ribs, or in the sides of the chest, or in the head when coughing; spirting of urine when coughing. The cough is at times excited by a tickling in the pit of the stomach.

Calc. carb., teething children; loose cough; rattling of mucus; bowels moved more frequent towards evening; profuse head sweat, especially during sleep.

Carb. veg., evening hoarseness; burning under sternum; soreness of chest, and heat of body when coughing; itching from throat down to centre of chest when coughing. The cough

comes mostly in spells far apart; is excited by going into the cold air out of a warm room. Cold knees in the warm bed. Pyrosis with great flow of water from the mouth during the day.

Caustic., morning hoarseness; cough worse on getting warm in bed; also better in bed and from a swallow of cold water; is attended with pain over the left hip; involuntary discharge of urine. Heartburn and acidity after fat, saccharine and farinaceous food; sudden cramps in heel-cords in the night; stiffness and lameness of jaws.

Chamom., during teething; cough during sleep without waking; child wants to be carried and is very cross. Suffocative constriction of the chest as if the throat were throttled, with constant desire to cough.

Cina, dry hacking cough, especially at night, followed by swallowing, as if something were rising in the throat; the child becomes stiff during the cough, and afterwards there is a clucking noise in the throat down to the stomach.

Cinchona, tickling cough worse from talking or laughing.

Conium, cough worse from horizontal position, speaking or laughing.

Cuprum, cough better from taking a sip of cold water; trembling after coughing; suffocating spells.

Drosera, the cough seems to come from the abdomen and convulses the muscles of the chest and abdomen; the patient tries to relieve the pain in chest and hypochondriacal regions by holding them tightly; perspires immediately on *waking* from sleep.

Eupat. perf., rough, scraping cough; violent cough with soreness in the chest; the patient supports the chest with his hands; cough before and after meals; pain in all the limbs and back; palpitation of the heart.

Euphras., dry, tickling cough only in daytime, better from eating, and drinking small quantities of beer or water. After the cessation of hæmorrhoidal flow.

Ferr. phosph., often relieves the catarrh on the chest of children, similar to Acon.

Hepar, cough tight or loose, worse in the morning; from uncovering any part of the body; better from wrapping up and keeping warm. Repelled eruptions.

Hyosc., nightly, dry, spasmodic, titillating cough, worse in lying.

Ipec., titillating cough with dyspnœa, nausea and vomiting, diarrhœa; face pale, even bluish during cough.

Iodium, tickling, dry cough; young persons subject to spitting blood; palpitation of the heart; swelling of cervical and bronchial glands; progressive emaciation by good appetite.

Kreosot., during dentition, when the child is extremely fretful, irritable, much agitated, and screaming in the night. Dry cough excited by a crawling sensation below the larynx.

Laches., cough is worse during and after sleep; in afternoon and evening; there is tickling in the pit of the throat and great sensitiveness of the throat to any touch; during cough, stitch pains in the hæmorrhoidal tumors; the stools are fetid even if formed.

Mangan., spasmodic cough from afternoon till bedtime, ceasing on lying down, worse from motion; expectoration scanty and difficult, causing long efforts of coughing for its expulsion; in the morning easy. Sore and bruised feeling through the chest.

Merc. sol., catarrh of the whole mucous membrane from the nose down; chilliness and heat alternately; feels hot in bed and chilly when moving his feet to a cooler place; sweats without relief; cannot bear either warm or cold air; cough worse when lying on the right side; tongue coated thick, yellowish; great thirst for ice-water, although it aggravates the cough.

Nux mosch., cough worse on getting warm in bed; excited by a creeping sensation from the chest to the throat; especially during pregnancy.

Nux vom., always after previous use of cough mixtures; cough worse in the morning; excited by beer, relieved by warm drinks. Nose stopped up in the evening; headache; fever with chilliness from slightest motion; irritableness; oversensitiveness to light, noise and smells. Involuntary micturition when coughing, laughing or sneezing.

Opium, convulsive, dry, tickling cough in paroxysms, worse at night, with bluish redness and sweat in the face, and yawning after the cough. Drowsiness, and inability to go to sleep.

Phosphor., tight cough, worse from evening till midnight; tightness across the chest; pain in the head, larynx and chest when coughing. Cough worse from speaking, laughing, eating, motion and on going into the cold air. Useful after onion syrup.

Pulsat., chilliness; thirstlessness; loose cough with yellow or greenish expectoration; tight in the evening on retiring to bed, often causing vomiting. After measles.

Rhus tox., cough excited by a tickling under the middle of the

sternum, worse from uncovering any part of the body; from laughing, talking, singing, and cold drinks; better from warm drinks. Pain in the limbs during rest, which feel stiff and lame on first moving, but get better during exercise; restlessness.

Rumex, dry cough in long paroxysms, brought on by any irregularity in breathing, taking a deeper breath than usual, talking; or from external pressure upon the throat-pit; worse in the evening after retiring; the patient covers his head all over, because the slightest draught of cold air at once brings on a distressing tickling in the throat-pit and behind the sternum, more towards left side; in walking he covers mouth and nose. (Dunham.)

Senega, tough mucus causes the greatest, often ineffectual efforts of coughing and hawking for its expulsion.

Sepia, cough seems to come from stomach or abdomen; nausea during and after cough. Tickling cough before midnight in bed, coming in rapid concussions until breath in exhausted, followed by expectoration of mucus with temporary relief. Worse in cold, wet weather. Eruption of hard papulæ on a red base with burning and itching; herpetic eruptions and passive congestion of the womb.

Spongia, cough wheezing and asthmatic, relieved by eating or drinking; oppression and breathing worse from lying with the head low.

Sticta, dry, racking cough, with splitting frontal headache, from tickling in right side of trachea, below larynx; cough excited by inspiration.

Sulphur, cough worse in evening on lying down, with itching in the bronchi, accompanied with retching. Hot flushes; cold feet; or hot palms and soles, hot vertex. Rheumatic pains in knees and hips at night, with coldness and soreness; itching of skin on retiring.

Tart. emet., rattling mucus; cough is followed by yawning; cough worse when lying; child wants to be carried about; worse after eating, with vomiting. Drowsiness; sticky perspiration; dyspnœa; cyanosis.

Ver. alb., capillary bronchitis, with livid face, blue nails, cold extremities and tumultuous, irregular contractions of the heart; cold perspiration on forehead when coughing; eyes half open during sleep.

Zincum, child grasps the genitals when coughing.

The **Chronic forms** may require any of the remedies above detailed; they may require one or the other of the following:

Alum., cough worse about 6 o'clock in the morning, on and after getting up; raises but little after considerable coughing; sometimes the cough is troublesome all night; it often recurs with the cold season and lasts until the warm season sets in again; the cough is relieved by lying flat on the face. Irritable persons and women who easily laugh or cry. Follows well after **Bryon.**

Ambra gris., cough dry in the evening, gray sputa in the morning; excited by exertion and music. Aged people.

Amm. carb., cough dry, tickling, with a sensation of heat and burning in windpipe under sternum, as of having swallowed alcohol; rough voice; from taking cold in rough, rather dry air. Aged people; adynamic state.

Amm. mur., cough with profuse, thick, whitish expectoration, sometimes in lumps, with heaving; mucous rattling in the chest, worse when lying, either without or with difficult expectoration; burning in the chest; dyspnœa on moving and when lying; rawness and soreness in fauces; coldness between the shoulders. Old age; bronchiectasias; emphysema.

Arg. nitr., rattling cough; hoarse voice; marasmus, the legs are especially emaciated; child cries much, unless carried about; craving for sugar.

Arsen., dry, spasmodic cough, with dyspnœa, asthma, suffocating spells, cardiac troubles; exhaustion, nervous irritability, hydræmia. Worse at night; from lying down, drinking and change of weather.

Calc. carb., expectoration yellow, lumpy, sweetish, sometimes fetid; when thrown into water, a lump is seen shooting to the bottom, with a mucous trail behind, like a falling star. (Fellger). For scrofulous individuals and such who have to talk a great deal, who are subject to hoarseness, to perspiration from any exertion, and palpitation of the heart after eating.

Carb. an., cough with hoarseness and night-sweats, very fetid and debilitating, following chill and fever in the evening; coldness and aching in lumbar region and lower extremities.

Carb. veg., burning in chest, heat and perspiration; great weakness; oppression; want to be fanned. Coldness of skin; pointed nose; rattling of large bubbles; cold knees in bed. Exhausted and aged persons.

Cinchon., black, difficult expectoration; cough worse with head lying low, or when lying on left side, or when moving, talking, etc.; better with head lying high.

Corall. rubr., cold expectoration.

Hepar, dirty yellowish expectoration, badly smelling; cough worse in the morning and when uncovering any part of the body; bronchiectasia.

Iodium, compare Acute Forms.

Kali bichr., ropy expectoration; cough excited from eating or drinking.

Kali carb., dry cough, as if excited by a dry membrane in the trachea, which cannot be detached; slimy, salty expectoration; cough worse about 3 o'clock, A.M., also from eating and drinking, with pain in lower part of the chest. Dry skin; dry stool; eyelids red and swollen, especially between the brows and upper lids. After measles.

Laches., compare Acute Forms.

Lauroc., short, titillating cough from cardiac affections.

Lobel. infl., "spasmodic contraction of the diaphragm in emphysema, accompanied by pain in epigastrium, tympanitis of the abdomen, impossibility of deep inspirations, extreme dyspnœa and cyanosis." (Meyhoffer.)

Lycop., "chronic pneumonia; bronchitis, with copious muco-serous, or muco-purulent secretion; emphysema; dilatation of the air-tubes; senile catarrh. Congestion of the liver, flatulency, constipation, cachectic complexion, red gravel, acid dyspepsia." (Meyhoffer.) "Cough dry day and night in feeble emaciated boys." (C. Wesselhoeft.) The cough ends with a loud belch; salty expectoration.

Natr. carb., cough is excited by coming into a warm room (**Bryon.**).

Natr. mur., transparent, viscid sputa; weak voice; fluttering of the heart; worse on the sea-shore; cutting pain in the urethra after urination.

Natr. sulph., when coughing at night has to sit up and hold his chest with both hands; asthmatic spells worse towards morning. Aggravation always from cold, damp and rainy weather.

Nitr. ac., cough with thirst in the morning.

Phosphor., besides a dry cough, there is in chronic cases often a free expectoration of abundant, tough mucus, especially in the morning. At times the expectoration is cool. Tremor when coughing.

Phosph. ac., cough in overgrown youths.

Platina, chronic cough dependent on uterine diseases with mental disturbances.

Plumbum, copious muco-purulent, or purulent expectoration.

Sanguin., cough worse at night; circumscribed redness of the cheeks; burning dryness of the mouth and throat, not relieved by drinking.

Secale, concussive cough; profuse perspiration; sleepless nights; colic, diarrhœa and bloatedness of the abdomen. Emphysema.

Sepia, compare Acute Forms.

Silic., expectoration of pus, which when thrown into water, falls to the bottom and spreads like a heavy sediment. (Fellger.) Cough worse from cold, and better from warm drinks.

Spongia, compare Acute Forms.

Stannum, bronchial dilatations with purulent expectoration; excessive muco-purulent expectoration; weak feeling in the chest.

Staphis., cough is excited by eating meat, or cleaning the teeth. Very sensitive, feeling easily hurt when being reproached. Cervical and axillary glands swollen.

Sulphur, often indicated in rheumatic, gouty, herpetic and scrofulous individuals, also when seemingly well indicated remedies refuse to act. Sensation as of ice in the chest whenever chilled, or perspiration is checked. Compare Acute Forms.

Tart. emet., compare Acute Forms.

Tussis Convulsiva, Pertussis, Whooping-Cough.

This affection is, in its nature, a species of bronchitis of an infectious and mostly epidemic nature, and not a mere nervous complaint. For although in some cases the nervus vagus has been found softened, and the medulla oblongata and its membranes hyperæmic, these changes are not of a uniform occurrence and must be considered as mere accidental complications; of constant presence on post-mortem examinations are the symptoms of catarrhal inflammation; hyperæmia, swelling and secretion of the mucous membrane of the larynx, trachea and bronchial tubes. In the beginning, whooping-cough cannot be distinguished from an ordinary bronchial catarrh; later, however, the fits of coughing assume that characteristic whoop, which consists in a long, crowing inspiration on account of a spasmodic closure of the

glottis, and which is followed by several short expirations in quick succession, ending most frequently with vomiting of ingesta and large masses of tough, gelatinous phlegm from the bronchi. Such paroxysms come as often as the collection of phlegm is sufficiently abundant to excite them. The child feels their coming and dreads them; therefore it almost always strives to get hold of something whereby to support itself. During the paroxysm regular respiration and the action of the heart are very much interfered with, and it explains those cyanotic symptoms, which we so frequently observe in the face and on the neck, (bluishness and swelling of veins) and also the general convulsions, in consequence of congestion to the brain. Hard paroxysms, by their violent convulsive straining, not unfrequently cause bleeding from mouth, nose and even ears. In rare cases children are seen to succumb suddenly and unexpectedly during a coughing fit, either from severe and persistent spasm of the glottis, causing suffocation, or from effusion of blood, or transudation of serum into the brain and its ventricles, or from paralysis of the heart, or a rapid development of a diffuse pneumothorax.

Whooping-cough has been divided into three stages: the *catarrhal, convulsive,* and the *critical.* The first is like any other catarrh; the second is *sui generis,* characterized by its peculiar paroxysms, and in a majority of cases attended by an ulcer on one or both sides of the frænulum linguæ, less often on the upper surface of the tongue, said to be the consequence of wounds received by thrusting the tongue between the teeth during the paroxysms at a spot where they are either much inclined or very prominent; the third, like the first, is similar to an ordinary catarrhal affection, and gradually wears off. The popular belief in regard to whooping-cough is, "that it is six weeks coming, six weeks standing, and six weeks going;" but, like all popular observations, this ought to be taken with some discrimination. For, although obstinate cases last a long while, under careful Homœopathic treatment they never last that length of time. Its PHYSICAL SIGNS are precisely those of bronchitis. Whooping-cough may, when the inflammatory process spreads into the finest bronchial tubes and further combine with bronchitis capillaris, may cause pneumonia and emphysema; or, by its disturbance of circulation, bring about hyperæmia and even œdema of the brain and its membranes. It is also not unfrequently complicated with measles, scarlatina and small-pox. In these complications lies its danger.

Ordinary, simple cases pass over without any difficulty, even without fever.

Whooping-cough prevails mostly epidemically among children up to the 8th year of age, and, as a rule, attacks them only once in their life, and is said to be broken off at once by vaccination. It is of rare occurrence in advanced years, although it does occasionally occur.

THERAPEUTIC HINTS.—For first stage, compare Bronchitis.

Ambra gris., severe paroxysms of hollow-sounding cough; oppression and rapid respiration; expectoration of large quantities of tough, grayish or yellow mucus, especially after waking in the morning. (M. Preston.) The paroxysm ends with belching.

Anac., fits of vexation excite the paroxysms; dyspnœa during and after the coughing spells; for children who are ill-natured and of an uncontrollable temper. (M. Preston.)

Arnica, the child cries before the paroxysms; eyes are blood-shot; there is bleeding at the nose.

Bellad., congestion to the head with red face and eyes; crying when coughing; sneezing after coughing.

Bryon., worse after eating and drinking with vomiting; involuntary loose stools during the coughing fits, involuntary discharge of urine.

Calc. carb., teething infants; convulsions.

Capsic., pain in the ears when coughing; ears and tip of nose hot; bloody mucus from nose when coughing; eyes protrude with burning and lachrymation.

Carb. veg., vomiting of food; bleeding at the nose; cough worse in the evening and in the open air.

Cina, spasms of the extensor muscles; the child becomes suddenly stiff; clucking noise, as though water were poured out of a bottle, from the throat down to the abdomen; frequent sneezing after the paroxysm; bleeding from nose and mouth. For children who are inclined to frequently wet the bed, and pick at the nose, and who are obstinate and irascible. Fretting excites the cough.

Cocc. cact., expectoration of ropy mucus, causing gagging and vomiting of food. Feel better in the open air.

Cor. rubr., spasms of cough so violent that children lose their breath and grow purple and black in the face.

Cuprum, convulsive, long-continuing paroxysms of coughing, worse from eating solid food, better from drinking cold water;

during the paroxysms loss of breath and convulsive throwing up of tough, gelatinous mucus, and afterwards constant rattling on the chest; bluish face and lips; convulsions of the flexor muscles.

Drosera, worse after midnight; feeling of constriction in chest and hypochondria, so that the patient tries to support these parts by the hands; worse from tobacco-smoke, and drinking; vomiting of ingesta and then of mucus.

Hepar, for third stage.

Hyosc., cough dry and worse at night in a recumbent position.

Ipec., spasm of the glottis before the paroxysm; bleeding from nose and mouth during the coughing fits; vomiting of mucus or food; convulsions and stiffening of the body backwards; vomiting of food without coughing; rattling of mucus in the bronchial tubes; rash-eruption.

Iodium, "patients are weak, sallow, short of breath, emaciated and have enormous appetite." (M. Preston.)

Kali carb., paroxysms worse after midnight, about 3 o'clock A.M.; bloated face, especially between upper eyelids and brows; dry skin, dry hair, and dry stools.

Laches., coughing spells always worse after sleep.

Ledum, dizziness and staggering after the paroxysm; moaning and groaning during sleep; spasmodic contractions of the diaphragm after the spell, so that inspiration becomes double, sobbing-like, as we observe after hard crying spells.

Mephit., spells day and night; the child must be raised, gets blue in the face and can't exhale. Convulsions; fetid diarrhœa.

Niccol., the cough is a dry hack, like the tick of a clock in its regularity, continuing for a long time. The child must be held straight up during the continuance of the cough, otherwise it is seized with spasms. The greatest possible degree of dyspnœa, but no expectoration. (M. Preston.)

Naphthal., recommended by Von Grauvogl.

Nux vom., cough worse in the morning and after eating; attended by vomiting, gagging, constipation, choking spells with bluish face, and pain in the abdomen. After previous quackery with cough-mixtures, drops, etc.

Phosphor., third stage.

Pulsat., first and third stage; disordered stomach.

Sepia, cough in rapid successions till breath is exhausted, then gagging and vomiting of mucus; cough worse in the night. (C. Wesselhoeft.)

Squilla, cough excited by drinking cold water; involuntary discharge of urine during the spell.

Stramon., barking, croup-like cough with suffocative contraction of the chest, rattling, palpitation of the heart; anxiety, congestion, blood-spitting; convulsions. When coughing while sitting, the lower extremities are jerked up.

Sulphur, frequent relapses; third stage.

Tart. emet., coughing and gaping consecutively; coughing excited by getting angry, and by eating; vomiting of food and mucus after coughing. Signs of carbonized blood.

Veratr., vomiting of tough, thin mucus, with cold perspiration on the forehead, involuntary discharge of urine and great exhaustion; face pale and sunken; restlessness and anxiety. Spells brought on from entering a warm room or drinking cold water; cough better when lying, worse when rising from bed. Lingering fever with lassitude, weakness, constant chilliness and great thirst. Fall and spring epidemics.

Bronchial Asthma, Asthma Bronchiale Nervosum seu Convulsivum.

Bronchial asthma is characterized by attacks of sudden dyspnœa, coming on after longer or shorter intervals, increasing rapidly in severity, and lasting for a few hours or for several days. Its nature is thought to be a spasm of the bronchial muscles (Biermer and others); a tonic spasm of the diaphragm (Wintrich); a tumefaction of the bronchial mucous membrane in consequence of dilatation of its blood-vessels through vasomotor nervous influence (Weber); a presence of fine-pointed crystals found in the sputa of asthmatic expectoration, which irritate the peripheral termination of the vagus nerve in the bronchial mucous membrane, and cause a reflex spasm of the musculature of the smaller bronchi (Leyden). It is quite likely that in individual cases, these various conditions may exist singly or conjointly, or may be produced either by a *direct* irritation of the vagus nerve, or in a *reflex manner* by irritation of various organs. For the first speak cases in which asthmatic and epileptic paroxysms, or asthmatic attacks with hemicrania and with angina pectoris alternated. The reflex manner by which the bronchial branches of the vagus may be excited, is by far more frequent. We see it originate in the sexual organs (uterine asthma), in the

sensitive nerves of the intestinal tract, as in disorders of digestion, irritation from worms (dyspeptic, verminous asthma), in the sensitive nerves of the skin (asthma from taking cold), in the sensitive nerves of the mucous membrane of the respiratory tract (asthma from nasal polypi); after measles and whooping-cough; from the smell (inhalation) of different drugs (ipecacuanha, yellow oak, fresh coffee, violets, lamp-black, etc.); of the pollen of certain grasses (hay asthma).

Essential anatomical alterations on post-mortem examination are not found. But Störk has demonstrated by tracheoscopic examinations that the mucous membrane of the trachea and main bronchi is intensely reddened during the attack. It is, therefore, scarcely to be doubted, that the mucous membrane of the smaller ones must be in a like condition, if not more so. It is also clear that long continued and frequently recurring attacks will lead to changes which are characteristic of chronic bronchial catarrh, or to emphysema.

Like all neuroses, bronchial asthma generally attacks in paroxysms, the intervals between which may amount to weeks, months and even years. It not unfrequently commences during sleep; then the patient gets restless; the gradual increasing difficulty of breathing causes terrible dreams and awakens him. On getting awake, the patient has a desire to draw a long breath, but feels that the inhaled air does not reach and satisfactorily fill his lungs. We hear, and so does the patient, all sorts of hissing, whistling, and rattling noises during inspiration and especially during expiration. The dyspnœa increases; the respiratory and especially the expiratory muscles labor; the alæ nasi move up and down; the sterno-cleido-mastoid muscles are put upon the stretch; the head is drawn backwards; the arms are pressed firmly upon the chair to widen the chest; or the patient leans forward, resting with head and arms upon a chair or table; but all in vain. The vesicular murmur ceases, and in place of it we observe here and there a hissing noise, coming and going suddenly; the inspiratory noise in the larynx and trachea, however, continues even stronger than normal. There is an anxious expression of countenance; the eyes are wide open; cold perspiration covers the forehead. The color of the face is pale; the impulse of the heart is violent, uneven, irregular; the pulse at the wrist is weak and small; the hands and cheeks are cold. After some time, varying from an hour to several hours,

with short intervals, the paroxysm ceases, either suddenly, when the air rushes into the bronchial tubes, which are suddenly relieved from spasm, causing puerile respiration, or the relief is only gradual, attended with belching, yawning, or increased secretion within the bronchial tubes, which excites cough and rattling of mucus for some time afterwards.

On *percussion*, we will find the clear lung-sound extending on the right anterior side of the chest, some two inches or more below the sixth rib, showing that the inflated lung has pressed the liver down into the abdominal cavity; while on the left side the cardiac dulness is sometimes diminished, in consequence of the distention of the edges of the lung. There is also only a very slight change of the limits of the lower edges of the lung during inspiration and expiration, for the reason that during expiration the lung cannot rid itself of the air within on account of the spasmodic closure of the finer bronchi. So also shows the percussion sound a tympanitic quality, usually in the lower portions of the thorax, especially posteriorly and on the sides, which is due to the greater distention of the alveolar tissue.

Its DIAGNOSTIC difference from *spasm of the glottis* lies in the difficulty of its *expiration*, similar to that of bronchial catarrh and emphysema, while the dyspnœa in croup, in œdema of the larynx, in stenosis of the trachea, in spasms of the glottis, and in paralysis of the dilators of the glottis is an *inspiratory* one.

Its PROGNOSIS is favorable. Asthma alone does not cause a fatal issue, but when complicated it may. It has its own remedy within itself. The accumulation of carbon relaxes all the muscles of the body, and, of course, the contracted bronchial muscles. As soon, however, as they relax, respiration is free, and the paroxysm ceases. (Niemeyer.)

THERAPEUTIC HINTS.—**Apis**, chest feels bruised; worse from heat; nettle-rash disappears.

Arg. nitr., must rise and walk about; an effort to breathe deeply takes away the breath; cannot talk; drinking suffocates; agony, thinks of killing himself.

Aral., dry, whistling respiration; cannot lie down, must sit up; gradual loosening and discharging of acrid mucus from nose and throat. (Hay asthma.)

Arsen., paroxysms from midnight till daybreak; has to leave the bed, sit up bent forward; great restlessness and anxiety, with

feeling hot and cold in turns; fear that he will be compelled to destroy his own life; sweat of whole body; burning pain in chest; prostration; attacks from cellar-air, stormy weather, heavy atmosphere, change of temperature, rapid walking.

Bellad., paroxysms in the afternoon and evening, with sensation of dust in lungs; worse in hot, damp weather, and after sleep.

Bromium, asthma of sailors as soon as they go ashore.

Cist. can., feeling as if the windpipe were too narrow, must open the window and breathe fresh air, which relieves; worse again on lying down.

Carb. veg., attacks come during sleep, always after midnight; must sit up by a table; is full of wind, but cannot raise it; for old people; weakness, with trembling; look as if dying.

Cuprum, attacks come on suddenly and after some hours cease suddenly; worse at night, when coughing, laughing, leaning backwards and after drinking; also before and during menses, after fright, chagrin, or a cold.

Ferrum, attacks after midnight, driving out of bed; better from moving slowly about and talking, from uncovering the chest.

Graphit., paroxysm every night, wakes him out of sleep usually after midnight; he has to jump out of bed quickly, must hold himself fast at something and quickly eat a piece of bread, after which the paroxysm passes off.

Hyper., attacks return with changes of the weather from clear to damp, or before storms; after lesion of the spine by a fall.

Ipec., constriction of throat and chest; gasps for air at the open window; worse from least motion; constant cough, no phlegm yielding, although the chest seems full of it; cough causes gagging, vomiting, followed by relief; stiffness of the body; pale face; cold extremities and cold perspiration.

Kali carb., must lean forward with head on table; worse from motion and drinking; pressure and tension in pit of stomach, after eating the least; belching, nausea, vomiting; puffy around the eyes; dry stools; dry skin.

Laches., feeling of constriction in the throat and chest, as though a cord were tight around it, necessitating the loosening of the covering of the neck and epigastrium. Heart feels as if it turned over and ceased beating for a while, after which the pulsations increase. Dyspnœa worse after sleep, after eating, from moving the arms, and touching the throat; cannot lie, must sit up bent forward with head thrown back.

Lobel. infl., worse from exertion; disordered stomach, especially a feeling of weakness in the pit of the stomach; asthmatic attack often preceded by prickling all over, even to fingers and toes.

Mephit., inspiration difficult, expiration almost impossible; asthma as from inhaling vapor of sulphur; in sleep; of drunkards.

Natr. sulph., in the morning about 4 or 5 o'clock, with cough and raising of glairy slime, and vomiting after eating; always worse in damp and rainy weather.

Nux vom., for persons who drink much coffee or liquor, and who are very irritable; they feel full in the pit of the stomach, belch a good deal, and feel better after it. Asthma worse in the morning, after eating, from cold air or exercise. Spasms of the chest from vapor of copper or arsenic.

Opium, short inspiration, long, slow expiration with a marked drawing in of the epigastric region; fine rales, constant cough, soporous condition, bluish face; extreme anguish with dread of suffocation; looks as if dying; slight relief from cold air and bending forward; worse from eating, drinking wine and smoking.

Pulsat., worse in the evening; constant chilliness; dizziness when rising from a seat; nausea and vomiting; palpitation of the heart; deranged menstruation; suppressed rash.

Sanguin., asthma with hay fever.

Sepia, long, difficult, noisy expirations.

Silic., breathing so difficult, that eyes protrude from their sockets; doors and windows must be opened; always during thunder-storm.

Stannum, attacks increase and decrease gradually.

Sulphur, attacks come on every eight days. Stooping posture; hunger and weakness every forenoon about 10 or 11 o'clock.

Tart. emet., great difficulty in expiration; must be supported in a sitting posture; great rattling of mucus. Children and old people.

Thuja, little cough but sensation as if something were grown fast in the region of the left lower rib.

Pulmo vulpis, has been recommended by Von Grauvogl in asthma humidum of old people when other remedies failed.

b. AFFECTIONS OF THE PULMONARY PARENCHYMA.

Pneumonia.

Catarrhal pneumonia never originates primarily in the alveoli, unless it be brought on by an irritant, such as chlorine, for instance, when an inflammation may arise in the alveoli and the bronchi simultaneously; otherwise it is always a secondary morbid process to *bronchitis*, which compare. For this reason it has received the name of **Bronchopneumonia**; and as the inflammatory process presents itself at first in isolated nodules, from the size of a pea to that of a hazel-nut within the collapsed portions of the lung tissue which still contains isolated portions accessible to air, it has also been named **Lobular pneumonia.** This morbid process may diffuse all over the lungs in the form of isolated infiltrations, and usually progresses from behind and below, forwards and upwards.

According to all observations its most frequent occurrence is found in the first three years of life, and those of old age, and as indirect causes we may set down all disturbances that favor the development of bronchial catarrh—such as measles, whooping-cough, diphtheria, influenza, rötheln; sometimes typhus, variola and scarlatina; also foreign bodies in the bronchi and inhalation of gases.

It presents no regular type of fever; the physical diagnosis is of great difficulty; we must mainly rely on the presence of a capillary bronchitis; on the consolidation of the lung, beginning at its base, arising slowly, at first without any prominent signs and mostly bilateral; on the retraction of the lower ribs seen during inspiration; on the indefinite limitation of the disease, the absence of all critical periods and the fluctuations which occur in general and local symptoms.

THERAPEUTIC HINTS.—Compare Bronchitis and Croupous Pneumonia.

Serous pneumonia, see **Oedema of the lungs.**

Pneumonia from embolism happens only in otherwise diseased persons. The emboli are formed either from clots which have originated in the cavities of the right side of the heart, or in the veins of the systemic circulation. In the first place there is

disease of the heart, and in the latter their sources are either large external wounds, venous thrombi of the uterus in puerperal women, or bed sores, ulcerations and suppurations of various kinds. When these plugs are non-infectious, they produce mere hæmorrhagic infarction; when they are of an infectious nature, they result in embolic or metastatic abscesses, which may perforate into the bronchi, or into the pleural cavity, or even break through the chest-walls. Simple infarctions are often accompanied with an effusion into the pleural sac, and are much oftener found in the right lung than in the left.

Croupous pneumonia, is that form which is commonly meant by the term "pneumonia," and consists of "an acute inflammation of the alveoli and bronchioles in which a fibrinous exudation is poured out upon the free surface of the mucous membrane, and there coagulates." (Juergensen.) It attacks in preference the inferior lobes of the lungs, especially on the right side; very rarely both lungs at the same time. It very rarely pervades one whole lung, being much oftener confined to limited portions, which may even be too small to be detected by percussion. It is also of rare occurrence that the inflammation remains confined to a central portion of a lobe only, (central pneumonia) but generally spreads to the surface of the lobe which joins the pleura. In aged persons and cachectic individuals the posterior parts of the lungs are most frequently attacked. When normally progressing, pneumonia offers three distinct stages for consideration: 1. *The inflammatory stage*, or *hyperæmia of the capillaries in the lung tissue with exudation of coagulable lymph.* 2. *Hepatization*, or *infiltration of the lung tissue with coagulable lymph.* 3. *Its resolution*, or *purulent infiltration.*

The characteristic signs of these different stages are as follows:

First stage. As a general thing the disease sets in with a violent chill, often attended with vomiting and followed by an intense fever, with a temperature of 104 to 105 in the evening and from 0.9° to 2.7° less in the morning; the pulse rises to 100 or 110 and the respiration to 40 or 50 per minute. In other cases the disease sets in with several light chills or chilliness, or the chill is entirely absent and the scene opens with convulsions and complete loss of consciousness. The skin is at first very dry, but becomes moist usually about the third day, though only temporarily. The face is purplish-red, and frequently only on that side which corresponds to the diseased side of the lungs. The lips be-

come covered with *hidroa*, (fever blisters) and also very often only on the affected side, or, at least, more marked on that side. The alæ nasi make corresponding movements with respiration; the voice of the patient is low and he speaks in broken sentences. *Cough* is, in almost all cases, present, although in some less marked than in others; the patient generally tries to suppress it, on account of the pain which it gives. At first it is dry, but after a time it yields a tough, jelly-like, viscid sputum, difficult to expectorate, and adhering to the lips, from which it has to be wiped off; it soon changes to the characteristic color of *rust*, from an admixture of blood.

When the patient complains during the coughing spells of *stitch-pain* in the chest, it is more or less a sign that the pleura participates in the morbid process; when he complains of *dull, heavy pains*, they probably originate in the bronchial tubes.

In consequence of the disturbed circulation through the lungs, the blood being either not sufficiently oxygenized, or being prevented from or retarded in its return from the brain, different *brain symptoms* originate, such as *delirium*, *stupor*, etc., so that the case may take the appearance of typhoid fever, from which, however, it is easily distinguished by the *hidroa* on the lips, which are scarcely ever found in typhoid fever.

In rare cases we observe *jaundice* combining with pneumonia. In such cases the liver appears enlarged on account of the engorgement which is brought about by the impeded circulation. As the hepatic veins cross the gall-ducts the latter become compressed and the gall retained. In other cases it seems that pneumonia is complicated with a parenchymatous inflammation of the liver, or a catarrh of the duodenum, causing in either case, icterus.

The urine is scanty and concentrated, and deposits, on cooling, a sediment of brick-dust urates. The bowels are usually constipated.

The Physical Signs at this stage are the following:

Inspection discovers *decreased mobility* of the diseased side of the thorax. In cases where both the lower lobes are engorged, the patient moves only the upper part of the thorax in breathing, whilst the abdomen remains quiet on account of the impossibility to retract the diaphragm.

Palpation shows an increased vocal fremitus, unless the bronchial tubes should be stopped up by mucus. The impulse of the heart is also increased, but felt in its normal position.

Percussion yields generally a short, tympanitic sound over the parts involved, as long as they still contain air.

Auscultation reveals the *crepitant sound* which, according to Wintrich, arises in consequence of the sticking together of the walls of the air-cells, and their separation by *inspiration.*

Second stage, hepatization. The above-mentioned symptoms—fever heat, dyspnœa, cough, pain, and brain symptoms—continue. The thorax appears, on *inspection*, still less movable during respiration; the vocal fremitus is strong, provided there does not intervene a pleuritic effusion between the hepatized lung and the thoracic wall.

Percussion gives forth a dull sound, and the resistance of the thoracic walls to the percussing finger is increased, provided the hepatized portion of the lung have the thickness of about one inch, and a superficial extent of several inches. A central location of the hepatization alters the percussion sound very little, if any, on account of the intervening portion of lung containing air.

Auscultation yields neither the natural vesicular breathing, nor the crepitant sound of the first stage, but *bronchial breathing, bronchophony,* and even *pectoriloquy,* provided the bronchial tubes, which are contained in the hepatized portion of the lung, be not stopped by mucus, blood-coagula, etc. There are also heard all sorts of rattling noises, if mucus exists in the bronchial tubes.

Third stage, resolution. This sets in sometimes with a sudden relaxation of all the violent symptoms—the temperature falls in from 12 to 36 hours to the normal, and at times even below the normal; the congested, even purplish face becomes pale, the skin moist, the dyspnœa ceases, the sputa become copious, frothy, yellowish, easily expectorated; the urine increases and becomes natural again.

On *inspection*, we observe that the thoracic walls regain their natural mobility; the *percussion sound* again becomes *tympanitic*, and by means of *auscultation* we observe the bronchial breathing and bronchophony becoming weaker; the crepitation sound reappears, until, at length, the natural vesicular respiration is reestablished.

This is the regular progress of simple pneumonia, lasting, on an average, from fourteen to twenty-five days, of which two, three, or five days are consumed by its first development, five to eight days by exudation progressing to perfect hepatization, and seven to fourteen days by the resorption of the exudation and convalescence.

But, to the first invasion of inflammation, new invasions often follow, so that it is not uncommon to find in one lung all three stages united.

Or, the adjoining portion of the healthy lung becomes œdematous; that is, infiltrated by a serous exudation, in which case the dyspnœa increases to suffocation. There is, at the same time, a frothy expectoration and fine rattling noises in the lung not affected with croupous pneumonia. The impossibility of breathing, on account of the serous infiltration, causes an accumulation of carbon in the blood, and, in consequence, death by suffocation.

Or, the disease takes an asthenic form when the symptoms of the central nervous system assume great prominence from the beginning, so that the whole process might be mistaken for meningitis or typhus; still the infiltration of the lung progresses slowly, and in severe cases is often attended with pleuritis, jaundice, albuminuria, and considerable enlargement of the spleen. This form is also called **Typhoid pneumonia.**

Or, the morbid process combines with diseases of the heart, such as endocarditis, pericarditis, or valvular affections, all of which lessen a favorable prognosis considerably.

Or, *abscesses* form in the third stage of the disease, which, if small, or deeply seated, offer no physical signs, and may discharge and heal. When large, and forming large cavities, we may hear pectoriloquy, and, in some cases, metallic tinkling.

Or, the hepatization changes into *tubercular infiltration*, which is especially the case when the seat of inflammation is in the upper regions of the lungs. In such cases the fever does not leave altogether, but shows some aggravation every night; cough, dyspnœa and the dull percussion sound of hepatization continue, while auscultation reveals bronchial breathing and bronchophony.

Or, the inflammation assumes a chronic form, and the hepatized lung becomes *indurated or cirrhosed*, the interstitial tissue growing tense and rendering the air-cells impervious to air. The patient is almost free from fever, but recovers very slowly in strength, and we observe, for a long time, the dull percussion sound and the bronchial breathing; whilst, the thorax, in these places, gradually sinks in.

Or, the whole morbid process ends in *gangrene*, which happens very seldom, and which may be diagnosticated by the sudden general collapse and the cadaverous smell of the breath and expectoration, which is dark blackish and copious.

The mean or average time which it takes for pneumonia to run its course, if it is not interfered with by medicines, is, as above stated, twenty-five days. But this average may, by judicious treatment, be considerably shortened; for pneumonia can be arrested in each of its stages. The most interesting data in this respect have been brought forth by Dr. Eidherr, of Vienna, who has collected all cases of pneumonia out of a large hospital practice, which had been recorded there for ten years. From these data it appears that under the application of the sixth decimal attenuation of the appropriate remedies the average came down to nineteen, under the application of the fifteenth potency to fourteen, and under the application of the thirtieth potency to eleven days.

The DIAGNOSIS must be based on the above detailed physical signs; but one of the most constant and characteristic signs is the great frequency of respirations compared with the pulse, which in very severe cases may approach that of the pulse, usually, however, amounts to one respiration for two or three beats of the heart, while in health the ratio is about 2 to 9, that is 1 respiration to $4\frac{1}{2}$ pulsations.

The most fatal days of pneumonia are those between the fifth and eighth days.

THERAPEUTIC HINTS.—**Sulphur**, according to Eidherr, *when exudation sets in*, that is, when auscultation reveals the crepitation sound.

Iodium or **Kali hydr.**, according to Kafka, *at the beginning*, when the disease localizes itself.

Bromium, *in extensive hepatization of the lower lobes.*

Phosphor., in *capillary bronchitis*, or *catarrhal pneumonia.*

Tart. emet., in *pleuro-pneumonia.*

Schüssler recommends **Ferr. phosph.** for the first, **Kali mur.** for the second, and **Calc. sulph.** for the third stage.

All this is very well, but will not suffice for all cases; we will still have to consider the following:

Acon., first stage, high fever; must lie quietly upon the back; cannot lie on the right side, by stitching pains in the left. "Raising is difficult, the expectoration being tenacious, falling in a round lump and of a dark cherry-red color." (C. Pearson.)

Arnica, traumatic cases.

Arsen., great anxiety and restlessness with tossing about; great

thirst, but drinking little at a time; burning and heat in the chest; pale face; cold extremities; prostration.

Baptis., "if I could only get my cough together; it seems to be in pieces, all scattered about, and I want to get it together." Typhoid form.

Bellad., nervousness, delirium, threatening convulsions; drowsiness; inability to go to sleep; starting in sleep. Face flushed, eyes congested; congestion towards the brain. Dry, tickling cough, worse in the night.

Bryon., expiration shorter than inspiration; inclination to lie perfectly still; the slightest motion increases all the symptoms; great thirst, wanting large draughts of water; desire for acid drinks; or little or no thirst with dryness of the mouth. Better on lying on the painful side; sometimes the reverse. "Expectoration falling in round, jelly-like lumps, and of a yellow or soft brick shade." (C. Pearson.)

Capsic., "when coughing, the air from the lungs causes a strange, offensive taste in the mouth, and a badly smelling breath rushes out of the mouth." (A. R. Wright.)

Carb. veg., third stage; cough by spells, or no cough; hippocratic face, eyes half open, nose pinched and cold, lips blue, pupils insensible, no complaining or crying; pulse small, quick, difficult to count; body emaciated and marbled; feet and hands blue and cold; abdomen distended with gas; respiration frequent and superficial; breath cold—a perfect picture of collapse.

Chelid., right side; bilious symptoms; pain under right shoulder-blade; great and quite irregular palpitation of the heart.

Cuprum, after a previous catarrh in the chest or in the bowels; sudden attacks of dyspnœa to suffocation; face earthy, dirty, bluish, seldom red; roof of mouth always red; sweat not profuse, sometimes sour-smelling, without relief; diarrhœa.

Ferr. met., no ailments previous to the chill; dyspnœa increases slowly; face pale, and in adults it becomes collapsed, hippocratic or expressionless, stiff and stupid; the roof of the mouth always white; skin neither cold nor burning hot; pulse neither full nor hard; stool consistent, brown.

Ferr. phosph., the expectoration is clear blood.

Gelsem., after a sudden check of perspiration with pain under the scapulæ of both sides. (A. E. Small.)

Kali carb., cough worse towards 3 o'clock A.M., almost choking; pain in lower part of chest with dull percussion sound; pulse small and somewhat irregular; face pale; skin and stool dry.

Kali hydr., after shaking chill, fell in a deep sleep, out of which he could not be roused; snoring loudly with closed eyes, injected conjunctiva, hot head, dry tongue, bluish lips, sunken lower jaw, bluish finger nails; irregular and intermitting pulse; lies upon his back; the extremities, when raised, fall back as if paralyzed; has not voided urine nor asked for any drink. Both upper portions of the lungs hepatized. (Kafka.)

Laches., great dyspnœa, worse in the afternoon or after sleep; left side; badly-smelling stools, even if formed.

Lycop., circumscribed redness of the cheeks; lips and tongue ulcerated, red and dry; fan-like motion of the alæ nasi; cannot bear to be covered; sweat without relief; cross on getting awake. "The patient raises a whole mouthful of mucus at a time, of a light rusty color, stringy and easily separated." (Pearson.)

Merc. sol., right side; bilious symptoms; jaundice; diarrhœa.

Nitrum, annoying feeling of heaviness in the chest, as though some great load were pressing the thorax together; can drink only in little sips for want of breath; dyspnœa to suffocation.

Nitr. ac., in protracted cases; in weak, cachectic individuals, where there is a sudden abatement of pain, and yet an increase of the pulse in smallness and quickness.

Opium, Mr. H. F., aged 40 years, of a phlegmatic temperament; double pneumonia. At times feels as though he were not in his house, which he expresses by saying: "I wish I could be in the house with my family." Although in a desperate condition, he is not much alarmed and wants to sit up a great part of the time, because the *bed feels too hot.* His whole body, except the lower extremities, perspire profusely, *the sweat is very hot.* The perspiring parts are covered by a heavy crop of sudamina. *He gropes with his hands about the bed as though he were hunting something.* Inasmuch as **Opium** is not one of the routine remedies in pneumonia, I wasted time in giving **Bryon.**, **Phosphor.**, etc. About the eleventh day **Opium**^{6} was given, which was followed by a sudden change and a most satisfactory recovery, without the aid of any other remedy. If it is objected that pneumonia gets well without treatment, I reply that the time when resolution generally takes place had passed when **Opium** was given, and that in all likelihood nature was inadequate to the task in this case, where not only the whole left but a considerable part of the right lung was hepatized. I have treated another very similar case where the same remedy yielded the same results. (C. Bernreuter.)

Phosphor., "stupor with burning, hot head, red, hot cheeks, red ears, contracted pupils, closed mouth. Murmuring and gesticulating in delirium. Takes water, when offered, greedily, but cannot swallow more than one sip, on account of shortness of breath. Wing-like motion of alæ nasi. The carotids pulsate violently; the heart beats strong; the pulse is very quick; the skin dry and hot. The lower portion of the posterior right lung is hepatized." (Kafka.) Great tightness across the chest; diarrhœa. "The expectoration when falling on paper will break and fly like thin batter." (Pearson.)

Pulsat., lies on the back, can't lie on the sides; semilateral perspiration (left side of the chest); can scarcely speak above a whisper; respiration 50 per minute.

Rhus tox., restless moving, because lying still increases pain and dyspnœa; tongue red at tip. Typhoid pneumonia.

Sanguin., second and third stage; extreme dyspnœa; tough, rust-colored sputa; the patient lies upon his back; there is not much pain in his chest, and that of a burning, stitching character; pulse quick and small; face and extremities inclined to be cold, or hands and feet burning, with circumscribed redness and burning heat of the cheeks, especially in the afternoon.

Senega, right side; violent stitches; sinking of strength; small, scarcely perceptible pulse; rare cough without expectoration, but great rattling of mucus in the chest; somnolence; dejected features.

Sulphur, may be indicated in any stage; sometimes also when other remedies fail. Its indications will be found in: hot palms and soles; hot vertex; faint, weak spells, especially in the forenoon; diarrhœa, especially early in the morning; suffocating spells, wants doors and windows open; restless and sleepless nights; cutaneous eruptions.

Tart. emet., great rattling of mucus; much coughing, with copious, frothy expectoration, or else no expectoration; œdema of the lungs; impending paralysis of the lungs; greatest dyspnœa and fits of suffocation; cyanosis. Pleuro-pneumonia.

Ver. vir., face flushed; red streak through the centre of the tongue; sinking, faint feeling in pit of stomach; regularly intermitting pulse; expectoration of pus and florid blood.

Pulmonary Consumption, Phthisis,

Is the general expression for the common result of a variety of pulmonary affections, among which may be mentioned *chronic pneumonia of the apex, broncho-pneumonias, bronchial chronic catarrh,* and *tuberculous infiltration,* all of which begin in the *upper lobes,* or *apices of the lungs,* and extend downwards. Inflammatory processes yield as products *caseous matter,* while "a cellular infiltration of the pulmonary connective tissue, composed of small nodules, absolutely bloodless, not capable of suppuration, nor of resorption, nor of organization, but only of degeneration," (Rindfleish) constitutes *tuberculous matter.* The principal reasons, why pulmonary consumption almost always begins in the apices of the lungs, are: a shortening and ossification of the cartilages of the first ribs of scrofulous children during the early years of life or even congenital, and a want of power of the respiratory muscles, constituting a paralytic thorax, laying the main burden of respiration upon the diaphragm; both conditions cause a diminished respiration in the upper parts of the lungs, and in consequence a non-removal of the secretions which form in these parts and become inspissated.

Although consumption is the result of various morbid processes in the lungs, its characteristic symptoms nevertheless may be summed up as follows:

Cough, may not always be present, or at least not in a marked degree in the beginning, but once present it continues to the end. Its severity is proportioned to the extent of the disease, and increases and decreases with the phases of the disease. Its character varies in different individuals, but towards the last it assumes a peculiar toneless sound, owing to the ulcerated state of the vocal cords and great muscular weakness.

Expectoration is at first usually absent, and when it makes its appearance it is of no distinctive character; later with the increase of pneumonic infiltration it becomes glassy, glutinous and at times tinged with blood. Still later, and in some cases earlier, the sputa contain opaque grayish-white striæ and granules mixed with the rest of the yellow viscid mass. On pouring the whole into water the granules sink to the bottom, while the striæ remain suspended; there appear also about this time elastic fibres of the lung tissue in the sputa, which sink to the bottom, if the sputa be mixed with an equal quantity of caustic soda and be

boiled in distilled water (18 : 100), to which, under frequent stirring, water three or four times its bulk is added, and the whole allowed to stand and settle in a conical glass.

Still later, and by degrees, the sputa become globular and compact; they sink in water or hang attached to a thread of mucus; they come from cavities formed by bronchiectases, and as the destructive process still further progresses and cavities form, the sputa changes to purulent matter, which is often expectorated in large quantities.

Hæmoptysis may occur at any period of the disease and is due either to a degeneration of the blood-vessels or to hard, straining spells of coughing. It may amount to a very small quantity of blood, merely staining the expectoration, and it may be so profuse that it kills the patient instantaneously. Large hæmorrhages take their origin from a rupture of larger vessels, mostly in cavities.

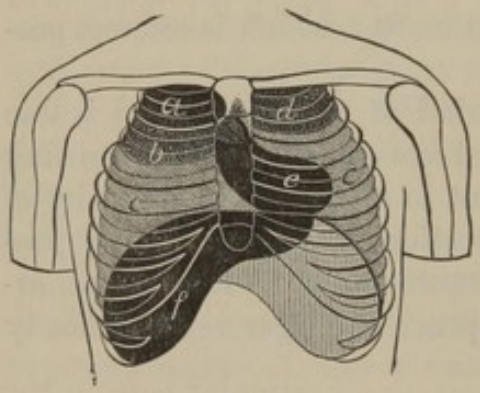
Phthisis is rarely accompanied with any particular *pain* in the chest, unless accompanied with pleurisy, which causes a sharp stitch-pain; so also is the *dyspnœa* of little account, unless induced by supervening pleuritic exudation or pneumothorax; but the breathing is in all cases greatly accelerated and especially from any exertion.

Inspection. The subclavicular region of the thorax sinks in, and the clavicles become prominent; the whole thorax is flat and elongated, and the shoulder-blades stick out; the respiratory motion decreases or ceases altogether in those places, and in far advanced cases the respiratory motion takes place only at the lower portion of the thorax. The whole body of the patient is emaciated, pale, and covered by a loose, thin skin. But there are cases where the thorax shows no such aspect, but appears finely developed.

Palpation reveals stronger fremitus in one or the other subclavicular region, and in the commencement an increased impulse of the heart.

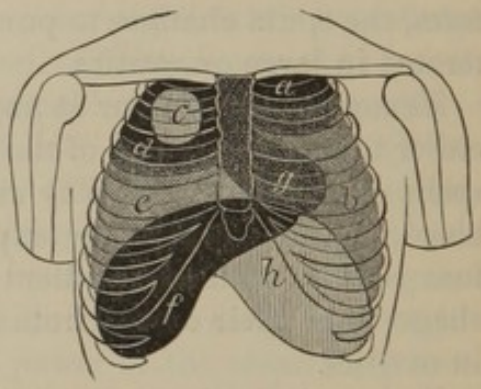
Percussion affords, at the beginning of the disease, no results whatever, because minute infiltrations cannot alter the sound, as they are surrounded by healthy, air-containing lung tissue. Only when they increase in size, and thus deprive the lung of air, the percussion sound will grow duller accordingly, and this is observable most apparently in the infra-clavicular, acromial and supra-scapular region. If at a still later period cavities have

formed, with tense, smooth walls, well adapted for reflecting sound, and if they are near enough to the thoracic walls, percussion may yield a tympanitic sound, or a metallic tinkling, or even a cracked-pot sound (if the cavity be connected with large bronchi), so that through percussion the air is forced out of the cavity into the bronchial tubes.



TUBERCULOUS INFILTRATION. (After Bock.)

a. Fleshy percussion sound.
b and *d*. Short dull sound.
c. Lung sound.
e. Heart.
f. Liver.



TUBERCULOUS INFILTRATION. (After Bock.)

a. Fleshy and dull sound.
c. Cavity with tympanitic sound, or metallic tinkling, etc.
b and *e*. Lung sound.

Auscultation at first yields an *increased* and *prolongated expiratory* murmur, (Jackson) which is often heard in two distinct jerks; also fine rattling noises, which, from coughing, disappear only for a little while (Niemeyer), and a systolic murmur in the subclavian artery on the affected side during expiration. (Ruehle.)

When the tubercles commence to dissolve, we often hear the "*click sound.*"

After the lung tissue has become infiltrated by tubercular masses, we hear, on auscultation, *bronchial breathing* and *bronchophony*, and all kinds of rattling noises.

When cavities exist, which, with their smooth and tense walls, are well adapted for the reflection of sound, we hear the *emphoric echo* and *metallic tinkling*, also the *cavernous noise.*

The pulsation of the heart is generally heard, even on the *right* side, quite distinctly.

Phthisis is almost always attended with *laryngeal* symptoms, such as hoarseness, difficulty of swallowing (food or drink go the wrong way), in consequence of tuberculous ulceration and inflammation.

The *circulation* is accelerated; the pulse is rapid, soft and empty, the action of the heart is increased, causing palpitation, and all this at first without any corresponding elevation of temperature. In short, the signs are those of any form of anæmia, which ultimately develops hydræmia; amenorrhœa.

In the *digestive organs* we frequently meet with loss of appetite, in some cases even at the beginning; with nausea, occasional vomiting, especially after coughing, with pain or oppression in the pit of the stomach, in the bowels, with diarrhœa. The latter is of very frequent occurrence, at times showing itself at the commencement of the disease, at other times during its whole course in recurring spells; most commonly, however, it belongs to a later period, quickly exhausting the vital forces, or ending with a rapidly fatal peritonitis when the tuberculous ulceration terminates in perforation.

Phthisis is at times complicated with *fatty liver* and *amyloid liver*, with amyloid degeneration of the *spleen* and of the *kidneys*.

The *skin* is conspicuous by its transparency and paleness, and by the distinctness of the veins; by its great sensitiveness to the slightest changes of temperature; by the easily flushing of the face on the slightest excitement, and the profuse perspiration with even moderate fever. The nails grow curved like claws, and there is a bulbous enlargement of the third phalanx. This symptom, however, is also found in other chronic diseases of the respiratory organs, such as emphysema, etc. The *pink-red line on the lower gums* occurs often at a very early period, though it is not found exclusively in phthisical persons. *Pityriasis versicolor* appears often at the very beginning.

One of the most constant signs of phthisis is *emaciation*, noticeable from the very beginning and advancing steadily with the progress of the disease. During the periods of remission the loss is made up again, but if loss of weight should set in again without assignable cause, a renewed attack may be expected. The total loss produced by the disease is generally from one-fourth to one-third part of the initial weight, and it involves not merely the fat, but also the tissues and the blood. On account of this wasting away the disease has appropriately been called *consumption*.

The fever also is a conspicuous feature of phthisis. In acute cases—florid phthisis—it is of a *continuous type*, the morning temperature falls but little below 102°, and the evening tempera-

ture rises above 104°. In chronic cases it is *intermitting*, its minima are generally normal, or a little below the normal, while the maxima average from 101.3° to 102.2° F.

At last must be mentioned the brilliant eyes of the phthisical patient and his unchangeable hopefulness even to the last.

Its PREDISPOSING CAUSE is a *scrofulous diathesis*, therefore phthisis is so frequently inherited. Still it may be acquired from lack of pure air, light, warmth and exercise and from a deficiency and poor quality of food, in short by anything that impairs the nourishment of the body, induces poverty of blood or depresses the nervous system. In scrofulous subjects these conditions of course will hasten the outbreak of the disease. The maximum of its occurrence lies between the fifteenth and twenty-fifth years.

Elevated positions are known to protect against phthisis. A height of at least 1,000 or 2,000 feet above the sea seems to be requisite for this purpose.

So also are *goitre, emphysema, valvular diseases of the heart* and considerable *contractions of the chest* by spinal curvatures said to be antagonistic to the development of phthisis, although exceptions to this rule surely occur.

As regards the *contagiousness* of consumption opinions have been at variance. Of late, however, experiments on animals seem to leave no doubt, that the disease is communicable, and cases are met where through the intimate relations existing between husband and wife the disease has been communicated; it is certainly good advice to be cautious in attending of, and associating with those who are far advanced in the disease.

Consumption furnishes the largest percentage of deaths amongst all other diseases; nevertheless, many cases are cured, and the disease cannot be called incurable, though favorable conditions necessarily are required for a successful treatment.

THERAPEUTIC HINTS.—General rules, which may serve rather as preventives: Fresh air, and plenty of it; exercise in the open air, and gymnastic exercises, which tend to widen and strengthen the chest; methodical breathing exercises for the same purpose, which consist in regular, slow, and full inspirations and expirations; singing; a good and nourishing diet, and a careful attention to the skin by rubbing and washing, in order to keep up its activity, and to harden it against atmospheric changes; rubbing

the skin with olive oil has also been recommended, and a change of climate has certainly proved beneficial in many cases.

About the time of puberty, all efforts should be made to prevent the excitement of sexual desires, such as reading loose literature. Masturbation is in the highest degree hurtful; mental exertions, and depressions of all kinds, are also injurious.

When catarrhal affections set in, they must be treated according to their special symptoms, and so also all other features, changes, and processes of the disease.

When a well-selected remedy is allowed to act, it manifests itself—according to Nusser's observations—generally in one of the following symptoms, which are *favorable:*

1. Swelling of the glands in the axilla.
2. Rheumatism in the muscles of the neck, shoulders, thorax, hips or extremities.
3. Swelling of the glands on the neck and ear.
4. The materia peccans rises from within towards the outside, contrary to the air which passes during respiration from without inward. The chest feels lighter, but the trachea and larynx become affected in a manner to produce hoarseness, which subsiding, the nose becomes sore, and finally ends with pimples and pustules around the nose.
5. The ears become affected, from mere ringing in the ears to suppuration within them.
6. The eyes become inflamed.
7. Headache and toothache set in; in such a case, let the patient suffer; a sudden suppression of them would quickly bring back all the troubles to the chest.
8. An eruption on the thorax, with or without itching on the chest or back.
9. Sweating of the feet.
10. Hæmorrhoidal irritations and tumors.
11. Violent colds in the head, which may indicate Acon. or Phosphor., and which almost always act beneficially.
12. The morbid action goes down into the intestines, and throws out gall, acid, mucus, or gas, until finally it develops itself in a cutaneous disease, first attacking the head, the upper extremities, the thorax, and so all the way down, like small-pox.

When a well-selected remedy brings forth any of these symptoms, never disturb its action by change or repetition.

SPECIAL HINTS.—Compare the foregoing chapters on catarrhal and inflammatory diseases of the respiratory organs, which may contain the hints just needed for the individual case. Besides compare:

Acon., intervening pleuritic stitches and blood-spitting.

Act. rac., intercurring congestions and inflammations from exposure, with dry, harassing cough; night-sweats and diarrhœa.

Arsen., acute pain in the upper third of right lung; hurried respiration upon moderate exertion, or dyspnœa on lying down; cough dry, or with expectoration of frothy, glairy and transparent mucus, or yellow and grayish-yellow sputa; cough worse in the evening on lying down and in the morning on rising; hæmorrhage from the lung with burning in the upper portion of the right lung. (R. R. Gregg.) Prostration; exhausting diarrhœa; intermitting chills, fever and sweat; thrush in the mouth.

Ars. jod., soreness in larynx; hoarse, racking cough day and night with profuse purulent expectoration. (H. V. Miller.)

Baptis., chill in the forenoon or afternoon, followed by heat and perspiration as in ague; general weakness and languor; sometimes loss of hopefulness. (J. S. Mitchell.)

Bryon., pleuritic pain and exudation; chills and fever afterwards; cough all day.

Calc. carb., pain in upper half of right lung; cough with purulent sputa, worse in the morning on rising, and in the early evening, with paroxysms during the day, less during the night. Loud breathing through the nose; bleeding from right nostril. (R. R. Gregg.) Easily perspiring, with fatigue from any little exertion; dizziness and want of breath on going up stairs; paleness of face with frequent flushes; nightly seminal emissions; too early and too profuse, or suppressed catamenia; inclined to looseness of the bowels, especially towards evening; damp, cold feet. "Expectoration falls to the bottom in water with a trail of tough mucus behind like a dropping star." (A. Fellger.)

Carb. veg., nosebleed in the night; cough in hard spells, not ceasing until masses of green or yellow, or purulent and offensive sputa are discharged; hoarseness in the evening; cool skin; cold knees at night in bed; great prostration; hippocratic face.

Cinchon., after loss of blood, long-continued nursing, seminal emissions; intermitting fever; sweats when dropping asleep.

Dulcam., after taking cold from any change of weather; tough, greenish expectoration, with moderate cough; stitching pain here and there in the chest; diarrhœa.

Ferr. met., flying pains in the chest; nosebleed; spitting of blood; feeling of fulness and pressure in the pit of the stomach; vomiting of ingesta; paleness of the buccal cavity; painless diarrhœa; watery menstruation; hectic fever. Especially in persons who, in consequence of any little emotion or exertion, flush easily in the face, or get epistaxis, or cough, dyspnœa, spitting of blood, or palpitation of the heart; the symptoms are relieved by moving slowly about.

Guaiac., pleuritic stitch-pains in the chest.

Hepar, cough excited when any part of the body gets cold from being uncovered; chilliness in the open air; paleness after any exertion; perspiration easily excited; afterwards burning redness of the face and dry heat in the palms of the hands. After pneumonia. The cough is barking, wheezing, choking, worse towards morning.

Iodium, cough from constant tickling in the windpipe and under the sternum, with expectoration of a transparent mucus, sometimes streaked with blood; morbid hunger even soon after a meal and yet loss of flesh, or else total loss of appetite; remarkable sense of weakness and loss of breath in going up stairs; emaciation of the mammæ; copious menstruation; morning-sweats; dark hair and eyes.

Kali carb., stitching pain in temples, eyes, ears, teeth, chest and different parts of the body; after dinner nausea, faintishness, sleep; about noon, chilliness; at night, heat; about 3 o'clock A.M., cough worse than ever. Puffiness of upper eyelids. Easily frightened; a slight touch of the feet causes the patient to jerk them up in affright; nursing mothers. "Expectoration of firm white globular masses of the size of a pea, flying from the mouth with considerable force when coughing or hawking; eruption of minute vesicles upon the soles of the feet with extensive itching. Burning in top of head and soles of feet; sweaty paleness; circumscribed red spot on one cheek; gastric derangement with belching, tasting like rotten eggs; hungry and faint about 10 A.M.; contraction of the heel cords; trembling sensation through the entire body, especially through the pelvic region." The 3d trituration cured whereas the 200th had failed. (O. W. Smith.)

Laches., cough worse after sleep, sometimes only through the day, but also during sleep without wakening; expectoration difficult, has to hawk, hem, cough and spit a good while before he succeeds in getting a little tough phlegm away. Fever worse in

the afternoon; stools smell very offensive, even if of a natural consistency. Sore mouth in last stage.

Ledum, phthisical symptoms alternating with rheumatism.

Lycop., after neglected pneumonias, expectoration of large quantities of pus; the expectoration tastes salty; cough day and night; hectic fever, circumscribed redness of the cheeks; worse from four to eight, P.M.; cannot bear covering; night-sweats.

Myrtus com., stitching pain in the left chest from the upper portion straight through to the left shoulder-blade, worse from breathing, yawning and coughing; spitting of blood.

Natr. benz., has lately been employed successfully in consumption; special indications wanting.

Natr. mur., great dryness of the mouth; follicular catarrh of fauces; fluttering of the heart; the patient gets worse on the seashore.

Nitr. ac., patients tainted with syphilis or mercurial cachexia. Ulcers in mouth and throat; fetid breath; colliquative night-sweats, very offensive; morning thirst; habitual looseness or constipation of the bowels; fissures of the anus.

Ol. jecor. aselli, the genuine article, which has not been "*purified*," has been of great use where scrofulous diathesis is conspicuous.

Phosphor., cough worse, dry and tight before midnight, tormenting; excited by talking, laughing, moving, eating or cold air; during cough, bursting pain in the head, and sore burning pain in chest and larynx; pain in the left side of the chest; heat or burning in the back between the shoulders; evening chill, followed by heat and sweat during sleep till next morning; in the morning the cough is loose. Puffiness around the eyes; diarrhœa alternates with constipation.

Phosph. ac., for young persons that have grown very fast.

Psorin., the exhalation from the body, its secretions and excretions have an offensive odor; after suppressed itch.

Sambuc., profuse sweats, but only while awake; during sleep the skin becomes dry and hot.

Sanguin., breath and sputa smell badly, to the patient himself disagreeable; before and after cough, belching of wind; after the cough, heat, and after the heat, gaping and stretching; circumscribed redness of the cheeks; diarrhœa; night-sweats; pain in ower left side of chest, extending upwards to left shoulder.

Sepia, "stitching or darting pains through the central portion

of the right lung; cough dry in the evening; free expectoration in the morning, or expectoration only at night, none during the day." (R. R. Gregg). Cough better when lying down; the cough sounds loose, but there is no expectoration, or only a little after great efforts.

Silic., profuse discharge of fetid pus; formation of cavities; profuse night-sweats; pale, wax-like appearance of the skin; stone-cutters' consumption.

Spongia, cough worse from evening until midnight, from cold air, from talking, singing or moving; better from eating or drinking; dyspnœa on lying down with the head low.

Stannum, feeling of great weakness in the chest; can talk only a few words at a time from want of breath; pressure and bloatedness of the stomach always after eating; great lassitude; hands and feet feel heavy and are cold, or else burning hot; constant chilliness alternating with flushes of heat; profuse night and morning-sweats; profuse expectoration, mostly of a sweetish taste.

Sulphur, dryness and burning in the throat; the breath appears hot to the patient; cough mostly dry, only now and then profuse discharge of purulent matter, which relieves for a while; the patient complains constantly of being too hot, puts his feet out from under the cover; congestion towards the head and chest, with palpitation of the heart; profuse sweating at night; diarrhœa early in the morning; after suppressed itch or other chronic eruptions; pain in left side of chest in lower portion through to left shoulder-blade.

Sulph. ac., stitch-pain through the upper part of the left chest to the shoulder-blade.

Acute Miliary Tuberculosis.

As the miliary tubercle can no longer be considered a necessary accompaniment of consumption, acute miliary tuberculosis must be regarded as distinct from phthisis, because in it the miliary tubercle forms the only, or at least, the most important lesion. "Acute miliary tuberculosis attacks with characteristic symptoms of a typhoid type both lungs, and frequently also other parenchymatous organs and membranes; the tubercle is the product of a very high degree of the tuberculous dyscrasia, and is deposited either all at once or at repeated rapidly recurring times with periodical exacerbations of the symptoms, and in the form of the

most delicate granulations, which have either a transparent vesicular appearance and are scarcely as large as oat grains, or are gray, crude, and of the size of millet seeds. The tubercles always appear in great numbers; they are discrete, uniformly distributed throughout the pulmonary parenchyma, and only in rare instances do they become aggregated and coalesce in particular places, but even then there is uniformity in their distribution. They all exist in the same stage, viz., that of crudity. At the same time the lung is hyperæmic and œdematous, while its tissue has lost its compactness as a result of emphysema. The hyperæmia may here and there have advanced to pneumonia and hepatization." (Rokitansky.) Outside of the lungs the miliary tubercles are also found in the spleen, liver, kidneys, pia mater, serous membranes, and in the choroid.

Its SYMPTOMS are: *Cough*, which is never absent, but not characteristic and expectoration may be wanting, or consist of simple, colorless, rather viscid mucus, sometimes mixed with streaks of blood.

The *respiration* is in almost all cases greatly increased, amounting in grown persons to from fifty to sixty, and in children to eighty or ninety per minute; the *pulse* runs up to 120 in the morning and during the latter part of the disease to from 130 to 150. The *temperature* is usually not very high, nor does it rise parallel with the increase of the pulse. Towards the end the temperature falls and the extremities become cool and the face cyanotic. *Auscultation* reveals a general accentuation of the vesicular murmur, whistling and sonorous ronchi from apex to base, and at a later period crackling rales, which become more and more abundant.

The disease attacks persons who are already consumptive, or have suffered from serious morbid processes in other organs, as a sudden aggravation of their symptoms, or in cases of persons of apparent health as an acute primary affection, usually setting in with a chill and subsequent high fever; assuming greatly the appearance of a typhoid fever, with mental dulness, vertigo, slight delirium, apathy, muscular prostration and sopor. The spleen, as a rule, is moderately enlarged.

It is most frequently complicated with phthisis, and typhoid fever. In the latter case the disease develops itself either during the height of the fever, or follows immediately after its termination. The differential symptoms between the two are: typhoid

fever has a regular type in the rising and falling of its temperature; shows roseola on the epigastrium and hypochondria; and exhibits at times diarrhœa, meteorism, and soreness in the ileo-cæcal region about the end of the second week and hæmorrhages from the bowels in the third week; while miliary tuberculosis is characterized by the absence of these signs and the presence of a disproportionate frequency of pulse and respiration relative to the grade of temperature.

From acute bronchitis it distinguishes itself by the rapid loss of strength.

Miliary tuberculosis may be inferred, also, in all cases in which a diffused friction murmur can be heard without any pleuritic symptoms. Its *course* is rapid and fatal.

THERAPEUTIC HINTS.—At the commencement compare: Apis, Arsen., Bellad., Bryon., Calc. carb., Gelsem., Laches., Phosphor., Sulphur.

At a later stage: Amm. carb., Arsen., Carb. veg., Laches., Opium, Tart. emet., Verat.

Emphysema Pulmonum.

It is an enlargement of the air-cells, either from distention, or from a union of several of them in one, by destruction of their partition-walls; or it is a transmission of air into the interlobular, or subpleural cellular tissue. Accordingly, we find on post-mortem examination the lungs swell out of the thoracic cavity like a cushion filled with downy feathers; and if rubbed between the fingers we do not feel that peculiar crepitation of a healthy lung; the air-cells are widened, sometimes to the size of peas (*vesicular emphysema*). In the second case, where it consists in an escape of air into the interlobular or subpleural cellular tissue, the pleura pulmonalis is raised into little blisters, which, by pressure with the fingers, can be shifted; in rare cases only is the pleura separated and filled by air to a large extent (*interlobular emphysema*).

The **Vesicular emphysema** originates always in the neighborhood of such portions of the lungs, the air-cells of which have been destroyed by morbid processes, such as tuberculosis and interstitial pneumonia. The vacant space caused by this loss of substance has to be filled up by a dilatation of the neighboring alveoli; it is therefore of a *vicarious* nature, and would often

amount to a much greater extent, were it not that the thoracic walls themselves sink in, and thus obliterate to a certain degree the vacant space caused by loss of substance inside. This same widening of the alveoli takes place when the two pleural blades have grown together to a large extent in consequence of pleuritis, and especially is this the case in the anterior and lower edges of the lungs, because the adhesion does not permit the upper portions of the lungs to extend as fully, as is the case when the two pleural blades move freely upon each other; the inspiratory act then overfills the lower anterior portions of the lungs and dilates the air-cells. The same result is effected when, in consequence of catarrhal inflammation of the finer bronchial tubes their swollen state prevents the free ingress of air, or in pneumonia, where the sound portion of the lungs has to perform the office of the entire lung. But also forced *expirations* as during spasmus glottidis, spasmodic asthma, blowing wind-instruments, bearing-down efforts during parturition, etc., may cause dilation of the air-cells.

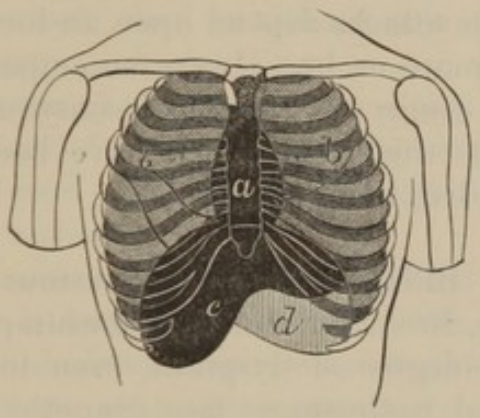
The **Interlobular emphysema** originates in consequence of rupture of the alveoli. The air then escapes into the interlobular and subpleural connective tissue. It is mostly the consequence of violent coughing spells, bronchitis and croup.

If we bring all this clearly before our minds, we can easily perceive the consequences which must follow from such conditions. For instance, that portion of the inhaled air which occupies the distended air-cells, is never fully replaced by the acts of respiration, the blood coursing here remains unoxygenized. In the further progress of the disease still more of the air-cells perish as their partition-walls become destroyed, consequently still more of that surface is lost by which the oxygenization of the blood takes place, and, therefore, the insufficiency of respiration and the accumulation of carbon in the blood grow greater in the same ratio. This the patient shows by his *dyspnœa*, by his great hunger for air. He strains all the muscles to widen the thorax and to get breath, and, in consequence, the thorax becomes *arched*, *barrel-shaped*, *permanently dilated*, and the muscles of the neck voluminous.

Another consequence, though later in appearing, is disturbed *circulation*. Hand-in-hand with the destruction of the air-cells goes the obliteration of the capillaries. The blood from the right ventricle does not find room within the lungs. Stagnation fol-

lows, and, in consequence, hypertrophy of the right ventricle with all its usual consequences, viz.: undulation of the right jugular vein; cyanosis of the face; varicosed veins on the cheeks and alæ nasi; swelling of the liver; catarrh in stomach and bowels; swelling of the hæmorrhoidal veins; scanty urine, etc.

Its Physical Signs, on *inspection*, are the arched, barrel-shaped, permanently dilated thorax from its upper region down to the sixth rib. However, this condition does not obtain in all cases. We find it only in those persons in whom the emphysema originated in forced expirations and closed glottis, at a time when the bony structure of the chest was yet yielding. In other persons, with a long, flat, so-called paralytic thorax, emphysema may



Emphysema. (After Bock.)
a. Heart. *b*. Lung sound. *c*. Liver. *d*. Stomach.

exist to a large extent without any such alteration of form. The hollow places above and below the clavicles bulge out during a fit of coughing, the neck appears short and thick, and the respiratory motion, notwithstanding the greatest exertion, is short, superficial, and, instead of being a successive motion of the single ribs, is a movement of the whole surface at once, a mask-motion. The intercostal spaces do not bulge out; on the contrary they often sink in during inspiration.

Palpation, if emphysema exists in the left lung, discovers the point of the heart lower down and towards the pit of the stomach, on account of the lower position of the diaphragm.

Percussion affords the best pathognostic sign of emphysema, inasmuch as we may with certainty ascertain by it whether the dull sounds of the heart and liver exist in their proper places or not. If we hear lung sound, where we ought to hear the dull sound of the heart or liver, we may be sure that heart or liver

are covered by the distended lung. *Characteristic* of emphysema, therefore, *is an abnormal extension of the lung sound over heart and liver. Tympanitic* this sound cannot be, because the air-cells are forcibly distended.

Auscultation affords no very positive information. In the presence of a catarrh, which is a frequent complication, we hear no vesicular breathing, but rattling and bubbling noises. The inspiratory murmur is weaker, and the expiratory sound is wanting, unless the emphysema be accompanied by bronchitis.

An emphysema which is confined to a small place only is not diagnosticable, and the interlobular and subplural form runs its course without any characteristic symptoms.

The progress of this disease is always of a chronic nature, and its more acute attacks depend upon an increase of bronchial catarrhs, which, more or less, always accompany it. It usually ends in general dropsy, as a natural consequence of those obstructions in the circulation which have been detailed above. The patient may live to a good age.

THERAPEUTIC HINTS. — Compare Spasmus Glottidis, Croup, Whooping-cough, Bronchial Catarrh, Consumption.

Arsen., highest degree of dyspnœa, even to suffocation, with great anxiety and restlessness; face cyanotic and covered with cold perspiration; consumptive symptoms with pain through upper part of right lung.

Bellad., disturbed circulation; dizziness, headache; palpitation of the heart; fulness of the abdomen.

Bromium, after pneumonia, asthma; pressure in the stomach; must sit up in bed at night.

Camphora, asthma worse after any bodily exertion; cough from talking, inhaling of air, and a feeling of coldness, which commences in the pit of the stomach and spreads from here over the chest and is exhaled as cold breath.

Carb. veg., often after Arsen.; great dyspnœa; cough in violent spells, with great anxiety, with watery, profuse expectoration, and under great exertion.

Chin. ars., regularly every forenoon at nine o'clock attacks of suffocating spells in tuberculosis; limbs icy cold; cold, clammy sweat all over; greatest anxiety and unquenchable thirst; must sit up, bent forward, if possible, at the open window.

Chlorine, easy inhalation; exhalation impossible.

Cuprum, asthmatic symptoms worse after walking against the wind.

Digit., complications with heart disease; better in lying perfectly quiet in a horizontal position.

Hepar, combined with bronchial catarrh, worse from slightest exposure; coughs from midnight till morning; sleeps with head thrown back.

Ipec., dry, spasmodic cough of old people; collection of mucus; difficult to expectorate, and giving only temporary relief; nausea.

Kali carb., dyspnœa worse at night; strong beat of the heart; loss of appetite; vomiting; dry skin.

Laches., all covering around the neck and even chest unbearable; worse after sleeping; cough torturing until some little tough phlegm is raised; stool smelling badly; follows well after Arsen. and Carb. veg.

Lobel. infl., inclination to sigh and take a deep breath.

Naphthal., recommended by V. Grauvogl for emphysema in consequence of forced expirations in buglers, etc., and after bronchial asthma without catarrh.

Opium, nightly asthma, with whizzing and rattling during expiration, which is long and attended with retraction of the epigastric region; inhalation short, without noise.

Sarsap., asthma worse after eating or motion.

Senega, feeling as though the thorax were too narrow, with constant inclination to widen it by deep inhalation; burning in the chest.

Sepia and **Sulphur**, both worse after sleep; getting suddenly roused by asthma from a deep sleep. Difference between both, see Gross' Comparative Materia Medica.

Tereb., asthma worse from motion.

Besides these compare Aspar., Bryon., Lobel., Natr. mur., Nux vom., Pulsat., Tart. emet., Veratr., and all that is mentioned under Asthma Spasmodicum.

Hyperæmia and Œdema of the Lungs.

This affection consists of a serous exudation into the air-cells and finest bronchial tubes of the lungs, and is either *acute* or *chronic*. Sometimes it is confined to a small portion, and sometimes it extends over both lungs. When *acute*, the lung appears strongly injected with blood, tense, leaving no dent on pressure;

when cut in two there oozes out of it a bloody serum, which contains a great deal of albumen. All the air is driven out by the serum, and the lung tissue is easily torn. On account of this similarity with pneumonia, acute œdema is also called **Serous pneumonia.**

In *chronic œdema* the lung appears pale and tough; upon pressure a dent remains; the serum is pale-yellowish, thin, and contains little albumen; it fills the air-cells and finest bronchial tubes. The lung is heavy and puffed similar to any dropsical swelling, and it is deprived of air as far as the infiltration of serum extends.

The *acute* form is generally the product of *hyperæmia* or *active congestion*—a fluxion of blood to the lungs, which may be caused 1, by *an increased action of the heart*, during the period of puberty, or in consequence of passions, or bodily exertions, or the use of stimulants; or, 2, by *direct irritations* from inhaling cold air, or hot and irritating substances; or, 3, by *obstruction* of the free circulation in some portions of the lungs by pleuritic effusions, pneumonic or tubercular infiltrations—producing a *collateral fluxion.*

The *chronic* form is generally the product of stagnation in consequence of heart diseases, especially of stenosis and insufficiency of the mitral valves; also of a weakened action of the heart due to asthenic fever in the course of acute exanthemata, typhoid or puerperal fevers, etc., to fatty degeneration of the heart, or myocarditis.

Its most prominent Symptoms are:

1. *Dyspnœa*, which oftentimes reaches such a height that the patient, in the greatest distress, tries all possible positions to get breath—now sitting erect, now bending forward and supporting the head with the arms, etc.

2. *Spasmodic cough* with a great deal of frothy and serous, sometimes bloody expectoration.

3. *Cyanotic symptoms*, in consequence of the obstruction to the circulation; and finally, if the breathing is still more impeded, and the blood becomes overcharged with carbon,

4. The patient sinks, his cheeks grow livid, and he dies of asphyxia—**Apoplexia pulmonum vascularis.**

Physical Signs.—Inspection and palpation show, notwithstanding the greatest efforts of the patient to draw in air, a *decrease* in the respiratory motion of the thoracic walls.

Auscultation reveals all sorts of rattling and bubbling noises, at times a weak crepitant sound.

Percussion, however, gives no results, unless the lung has become deprived of air to a large extent, when, of course, the sound is *dull*, or *tympanitic*, when the lung tissue becomes compressed, so that it loses its natural elasticity.

THERAPEUTIC HINTS.—In acute œdema, compare **Acon., Nux vom., Scilla, Sulphur, Tart. emet.**

Amm. carb., somnolence; poisoning of the blood by carbon.

Arsen., great anxiety; restlessness; always worse towards midnight or soon after.

Carb. veg., collapsed state.

Cinchona, after debilitating losses.

Ipec., spasmodic cough; sickness of stomach; fine rattling noises in the chest.

Kali hydr., sputa like soap-suds.

Laches., suffocating fits; worse after sleep; dark, almost black urine; offensive discharge from the bowels.

Phosphor., if worse before midnight, with tightness in the chest.

Tart. emet., large bubbling rattling; chest appears full of phlegm without capability of relieving itself.

Besides may be indicated: Aurum, Bellad., Cactus, Cimicif., Gelsem., Glonoin., Sanguin., Spongia, Ver. vir.

Compare Asthma, Pneumonia, Heart Diseases.

Gangræna Pulmonum

Is a process of mortification and putrifaction of the lung tissue, owing to the admission of air, as it occurs in all lifeless animal tissues when under the influence of air, moisture and a certain temperature. It is either *circumscribed*—that is, confined to one or several foci of various sizes—or *diffused*, without accurate lines of demarcation; the first form may degenerate into the latter.

Its CAUSES are: *interruption*, or weakness of the blood-currents, by pneumonic infiltrations or emboli; *putrid suppuration* in the neighborhood of the air-passages by perforation into a bronchus; decomposing *foreign bodies*, which have found their way into the lung through the trachea; *putrid contents* collected in dilated bronchial tubes; *injuries* caused by stabs or gunshot wounds.

Its most characteristic symptom is the sputum, which consists

of a greenish-gray or brownish-colored fluid, with an exceedingly offensive smell. The breath, too, or forced expiration, exhibits the same disgusting smell. There is almost always a racking cough attending the disease, and dangerous hæmorrhages may ensue from the gangrenous erosion of blood-vessels. The temperature is usually very high. The diffused form runs a very rapid course with all signs of an asthenic fever, delirium, stupor, hiccough, colloquative diarrhœa and collapse. Physical examination yields at first generally a tympanitic sound on percussion, which at a later period grows dull. Small gangrenous masses, or larger ones, which do not communicate with a bronchus, or which, from some other cause, cannot discharge their contents, are out of reach of diagnosis. The circumscribed gangrene may discharge and heal; the diffused form usually is fatal.

THERAPEUTIC HINTS.—Compare: Arsen., Carb. veg., Carb. ac., Kreosot., Silic.

Hæmorrhages of the Lungs, Hæmoptoë, Hæmoptysis.

Hæmoptoe—hæmorrhage of the respiratory organs, **Hæmoptysis**—expectoration of blood, consists either of mere exudation of blood-corpuscles through the uninjured walls of the capillaries—**Diapedesis,**—or of a pouring out of blood through ruptured vessels.

Hæmorrhages occur most frequently in the smaller and terminal bronchi—**Bronchial hæmorrhages**; parenchymatous bleeding is less frequent, and is either confined and sharply outlined, without destruction of the parenchyma—**Hæmorrhagic infarction,**—or is diffuse, abundant and associated with destruction of the lung tissue, and *causing* the formation of cavities—**Pulmonary apoplexy.**

Bronchial hæmorrhages may be caused in the main by all such morbid conditions as will produce either *active* or *passive* congestion of the bronchial mucous membrane, for instance: bronchitis, whooping-cough, pneumonia, tuberculous infiltrations, acute exanthemata, inhalation of irritating gases, excessive heat or cold, severe strains and bodily exertions, suppression of menstrual or hæmorrhoidal flows, disorders in the circulation resulting from heart disease, and peculiar altered conditions of the blood, which impair the nutrition of the vascular parietes, and manifest themselves in scorbutus, hæmophilia, scarlatina, typhus, variola, etc., also in bleedings from other portions of the body.

Hæmorrhagic infarctions are most frequently due to organic heart diseases, especially of the right heart, to pulmonary emphysema, senile or early acquired atrophy of the lungs and thrombosis of the peripheric veins of the body.

Pulmonary apoplexy arises from the rupture of large, generally arterial vessels, most frequently in consequence of injuries, gunshot and penetrating wounds, contusions and concussions of the thorax; rarer from endarteritis and aneurismal changes of the walls of the pulmonary arteries, or their erosion by cancer, abscesses and pulmonary gangrene.

In order to decide whether the blood comes from the nose, larynx or trachea, a close inspection of these parts will best decide. If in doubt whether the hæmorrhage comes from the stomach, we will have to inquire about the conditions of the digestive organs and those of the portal circulation.

Small hæmorrhages issue usually from capillaries, profuse ones from a large vessel; **Hæmorrhagic infarction** is, as a rule, associated with a high degree of dyspnœa, the physical signs of a circumscribed pulmonary solidification and heart disease. **Pulmonary apoplexy** kills, so to say, at the spot.

THERAPEUTIC HINTS.—**Acon.**, in many cases; but best indicated by restlessness, agitation, fright, expression of anxiety in the face, palpitation of the heart, congestion towards the chest and head, fear of death; after wine. The blood comes hot and fresh with every little cough.

Arnica, after mechanical injury; from slight, bodily exertion; in tuberculous individuals; constant tickling cough, starting either from the larynx or from under the sternum.

Arsen., after venesection, or loss of blood otherwise; great weakness and fainting; restlessness, must walk about; burning in chest and stomach; suppressed menstruation.

Bellad., cough from constant tickling in the larynx; congestion to head and chest; stitching pain in chest, worse from motion; suppressed menstruation.

Cact. grand., with heart disease.

Carb. veg., pale face; cold skin; slow pulse, intermitting, scarcely perceptible; mostly attended with violent cough in paroxysms and hoarseness, worse towards evening; sometimes burning in chest.

China, after great loss of blood or vital fluids; during nursing, etc.; with all the signs of weakness which arise from want of blood; continual pain in chest and stomach, worse from touch.

Collin., blood dark, tough, coagulated, enveloped in viscid phlegm; previous discharge of blood per anum; subsequent costiveness.

Conium, especially after masturbation.

Croc. sat., blood dark and stringy.

Digit., hæmoptysis before menstruation with pain in the chest, back and thighs; from obstruction of the pulmonary circulation in consequence of heart disease and tuberculosis. Engorged veins about the head, pale, livid complexion, coldness of skin with cold sweats, irregular pulse and palpitation of the heart.

Eriger., dark coagula, passive hæmorrhage.

Ferrum, always better from walking *slowly* about, notwithstanding weakness obliges the patient to lie down; *quick* motion and talking bring on cough; there is pain between the shoulders; the face has a yellowish tint; sleep is poor at night, and there is frequent palpitation of the heart.

Hamam., blood is venous; comes into the mouth without any effort, seemingly like a warm current from out of the chest; mind calm; sometimes taste of sulphur in the mouth.

Iodium, annoying tickling cough in phthisical persons; oppression and palpitation; trembling and coldness of the extremities.

Ipec., blood frothy and bright colored; gasping for breath, pulse small and frequent; face livid and anxious.

Led. pal., where there is stagnation in the liver and portal veins; congestion towards the head and chest; hardness of hearing; tickling in the larynx; spitting of bright red blood. Hæmoptysis alternating with rheumatism.

Millef., in tuberculosis. It bubbles up in the chest as if warm blood were ascending, which is raised without cough. After injuries.

Myrt. com., in phthisical persons; sharp pains through the upper part of the left lung, from front to shoulder-blade.

Nitr. ac., according Goullon the best remedy.

Nux vom., especially after high living, suppressed hæmorrhoidal discharges, and after fits of passion, etc.

Opium, blood is thick and frothy, mixed with phlegm; absence of all pain; slumber, with starting.

Phosphor., vicarious spitting of blood for the menses; tubercular diathesis, dry tight cough, worse from evening until midnight; bronchitis.

Phosph. ac., phthisis; typhoid fever, with diarrhœa and great rumbling in the bowels; fast growing youths.

Pulsat., dark, coagulated blood; chilliness; loose stools; suppressed menstruation; crying spells.

Rhus tox., after straining, lifting, blowing of instruments, or worriment and mental excitement immediately renewed; blood bright.

Senec., in suppressed menstruation; after venesection.

Sulph. ac., in climacteric period; also habitual hæmoptysis excited from least fright, vexation, talking, running, in persons who flush easily, have palpitation, perspire easily, are easily excited. Also in scorbutic, alcoholic affections, adynamic fevers, tuberculosis.

Stannum, in phthisical patients, when at the same time there exists copious expectoration.

Tart. emet., when, after the attack, there remains for a long time a bloody, slimy expectoration.

In suppressed menses, compare Arsen., Bellad., Millef., Phosphor., Senec., Sulphur.

After the suppression of habitually bleeding hæmorrhoids, compare Acon., Nux vom., Sulphur.

After wine, Acon.

After whiskey, Pulsat., Mercur.

After coffee, Nux vom.

c. AFFECTIONS OF THE PLEURA.

Pleuritis, Pleurisy, Inflammation of the Pleura.

When we examine, post-mortem, a case of pleurisy, we observe on the pleural surfaces, pinkish dots or streaks here and there, consisting of enlarged capillaries, also irregular, dark red, ecchymosed patches of extravasation. The surface of the pleura, instead of being smooth and shining, appears dull and swollen, rough and villous from fine granulations and new cells upon it. This is the most frequently occurring form of pleurisy without exudation, and therefore called *pleuritis sicca*, dry pleurisy.

In other cases, we observe, in addition to the above-stated features, which are, in fact, the ground-type of all forms of pleurisy, *a scanty fibrinous exudation, covering, like paste, or (if in greater abundance) like a soft, croupous membrane, the inflamed pleural layers.* During the progress of recovery it gradually becomes dissolved by a fatty metamorphosis and is absorbed; but those

fine granulations and new cells which lie underneath, and which are inherent parts of the inflamed pleura, frequently give rise to *adhesions* of the pleural surfaces. This fibrinous exudative pleurisy accompanies almost always croupous pneumonia.

In still other cases we observe an abundant serous fibrinous exudation, varying in amount from a few ounces to ten or more pints. It consists of a greenish-yellow serum, of coagulated fibrinous masses and pus corpuscles, which partly float in the serum and partly are deposited upon the pleural surfaces, where they adhere like croupous membranes. At times the pus corpuscles are in such abundance, that the exudation assumes a *purulent* character; and when from rupture of the finer blood-vessels, or simply by transudation in consequence of a hæmorrhagic diathesis, large masses of blood-corpuscles mix with the exudation, we have a *hæmorrhagic* effusion. In consequence of, and according to, the mass of the pleuritic effusion, the lung of the affected side becomes compressed at times to the fourth, sixth, or even to the eighth part of its normal volume; its arched costal portion is flattened down, and its substance appears pale reddish, or bluish-gray, or lead colored, and becomes tough like leather, bloodless and airless. Heart or liver become displaced accordingly, as the effusion is either on the left or right side. The sound lung always shows more or less congestion, and in fatal cases a collateral œdema of high degree.

In case of recovery the exudation is gradually absorbed, frequently leaving yellow cheesy masses behind, which are residues of unabsorbed pus-globules and fibrinous substances.

In the same degree in which absorption takes place, the lung regains its normal volume and condition, provided the air-cells be not glued together, or closed by fibrinous deposits. In these conditions air cannot enter, and the lung, or such part of the lung, cannot regain its normal expansion. This would cause a vacuum in the thorax, were it not for the pressure of the external air, which at once flattens down the corresponding portion of the thoracic walls, or pushes heart or liver higher up into the thoracic cavity.

The *purulent* exudation, which is so rich in *pus-globules* that it forms an opaque, yellow, thickish fluid, is called *empyema* or *pyothorax*. Even in such cases absorption is possible. Should, however, the pleural substance in consequence of the suppurating process be softened and perforated, the purulent matter would

then escape either through the thoracic wall, in case the pleura costalis were destroyed, or through the bronchial tubes, if the pleura pulmonum were perforated.

These four different forms of pleurisy must of course manifest themselves by different symptoms.

The first form **Pleuritis sicca**, when, in consequence of inflammation, new cells form upon the pleural surfaces, but *without exudation*, seems to take place frequently without any particular signs. This statement is founded upon the existence of many adhesions, found in post-mortem examinations, in persons who had *never* complained of symptoms that could possibly have been taken as indications of pleurisy.

The second form, with **Scanty fibrinous exudation**, is generally coupled with pneumonia or tuberculosis. It is characterized by a *sharp stitching pain*, which hinders deep inspiration, coughing, sneezing and motion, and for this reason the patient can breathe only superficially. If not complicated with pneumonia or tuberculosis, there is scarcely any cough attending it.

On inspection we observe, in consequence of the pain which is caused by breathing and moving, that the patient bends his body towards the affected side, in order to bring the ribs of that side nearer together to prevent their respiratory motion, in consequence of which the spine itself becomes curved, its convexity being directed towards the sound side.

Palpation merely confirms the superficial breathing, and may yield the perception of a grating feel; more, however, towards the end than at the commencement of the disease, after the exudation has been absorbed, when, therefore, the surfaces are dryer and the breathing deeper again, so that the rough surfaces glide more forcibly one upon the other.

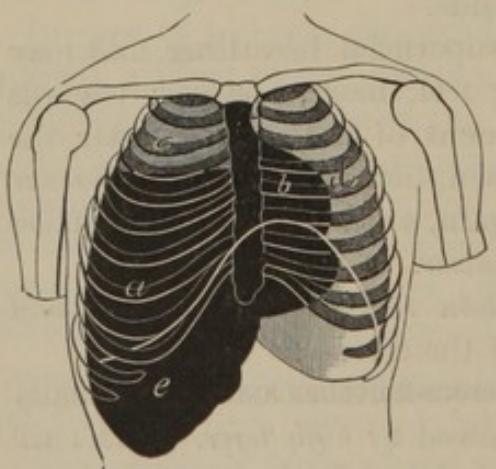
For this same reason, *auscultation* reveals the *friction sound* more decidedly towards the end of the disease.

The third form, with **Abundant serous-fibrinous exudation**, usually commences with a *strong chill*, followed by *high fever*. The chill is frequently repeated, and the whole affection may look very much like a tertian intermittent fever. It is also characterized, like the second form, *by violent stitching pains* in the sides of the chest, which, however, often subside, or at least diminish, before the inflammation and exudation have reached their full height. The subsidence of pain is therefore, in this form, not always a sign of conquered disease.

Generally it is accompanied by *dyspnœa* as long as the fever lasts, and in such cases, and where an extensive exudation compresses the lung, and causes a hyperæmic state and catarrh in the adjoining portions of the lung, there is also cough. Otherwise the cough may be absent altogether.

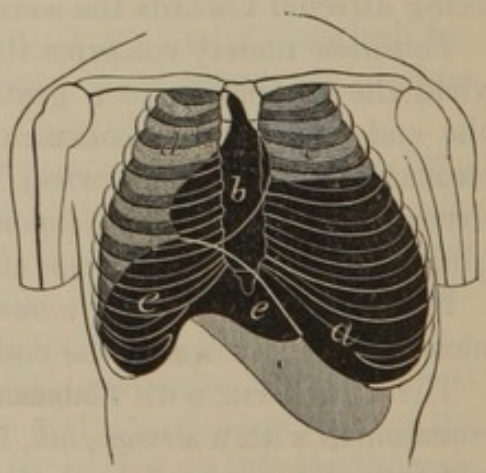
The disease generally reaches its height in about six or eight days, and commences its gradual decline from that time. Fever, pain and cough cease, and absorption of the pleuritic exudation takes place, diminishing at first much more rapidly than towards the last, so that sometimes, even after weeks, some fluid can still be detected.

In some cases this form comes on quite stealthily, without either prominent fever, pain or cough. The patient feels only a gradual loss of strength, some difficulty of breathing; he grows pale, and loses flesh, and thinks that the source of all his troubles lies in his abdomen, especially when, by exudation on the right side, the liver has become dislocated downwards. Even the physician may be astonished when he, by closer examination, finds the whole pleural sac filled with fluid, amounting to from ten to fifteen pints. Such an enormous quantity, of course, can be absorbed at best only very slowly, being alternately augmented and decreased in the meantime. It terminates finally, in a great number of cases, in tuberculosis.



Exudation on Right Side. (After Bock.)

a. Exudate.
b. Heart.
c. Compressed lung with tympanitic sound.
d. Lung sound.
e. Displaced liver.



Exudation on Left Side. (After Bock.)

a. Exudate.
b. Displaced heart.
c. Compressed lung with tympanitic sound.
d Right lung with normal sound.
e. Liver.

Inspection discovers an enlargement of the thorax in breadth and depth on the diseased side, if the exudation is sufficiently

large. The intercostal spaces are wider, and are on a level with the ribs, or even bulging out between them. The respiratory motion is much less, or ceases altogether on the diseased side.

Palpation reveals the *absence of the vocal fremitus*, which is the necessary consequence of the intervening fluid between the thoracic walls and the lung; it reveals *dislocation of the heart or of the liver*, and also sometimes the *friction* of the roughened pleural surfaces above the exudation.

Percussion yields a somewhat *duller sound*, in case the exudation be moderate, so as not to compress the lung tissue to such a degree as to drive all air out of it; it yields a *tympanitic sound* if the pressure upon the lung be just sufficient to deprive it of its natural tension and elasticity; it yields a *dull, fleshy sound* if the secretion augments to such a degree as to deprive the lung of all the air; above this dull sound we hear again the *tympanitic sound*, for here the lung, although compressed, is not entirely without air. Variation in position does not change the result of percussion, because the exudation is usually enclosed and bordered by adhesions.

Auscultation reveals an *absence of the respiratory murmur* over the whole part that is covered by exudation. In other cases, however, we hear a loud bronchial breathing all over the thorax, especially in case of dyspnœa; no matter how much fluid intervenes between the thoracic walls and the lungs, or how much the lungs may be compressed. The auscultatory signs are therefore not very characteristic.

The fourth form, **Empyema** or **Pyothorax**, differs from the latter only by the abundance of its pus-globules, and is frequently found in consequence of infectious diseases and a general pyæmic condition. Its physical signs are all the same as above stated.

When empyema is going to *discharge through the thoracic walls* we observe in the region of the fourth or fifth rib an œdematous swelling, which soon changes into a hard, tense swelling, protruding from between the ribs; by and by it becomes fluctuating, and lastly it bursts and discharges an immense quantity of pus. This opening sometimes remains for years, forming a *thoracic fistula*, and discharges every now and then larger or smaller quantities of pus.

When empyema is going to *discharge through the bronchial tubes* there may appear at first, symptoms of pneumonia, or the bursting takes place suddenly, when, with violent fits of cough-

ing, the patient throws up large quantities of pus. Even here recovery is possible, though it may happen that the patient suffocates, or sinks under the influence of pyæmic poisoning of the blood. The empyema may also *discharge downwards through the diaphragm into the abdominal cavity, where it occasions a violent peritonitis.*

When the course of pleuritis is very acute, the morning and evening temperatures rise to above 104° F., and the pulse to 120 and higher; there is frequently great disturbance of the sensorium, often violent delirium, great dryness of the tongue, excessive thirst and total loss of appetite; the anterior extremity of the spleen, even in the early days, can be distinctly felt, and diarrhœa may set in at this time, thus simulating a case of typhoid, though the deeply cyanosed complexion, the constant abnormal elevation of temperature and pulse and the physical examination will soon correct an error of this kind.

When in the first week of illness an unusual pallor presents itself, accompanied with rapid loss of strength, high fever and a considerable degree of pain in the affected side, we may assume that a hæmorrhagic exudation has taken place in consequence of a *tubercular* pleuritis in young persons; in old people the same symptoms hint to a tendency of the exudation to become purulent.

When the inflammation attacks the diaphragmatic portion of the pleura—known by the ancient physicians under the name of *paraphrenitis*, then the pain is usually in the hypochondriac region, about the cartilages of the false ribs, at the level of the diaphragm; the respirations are short and quick, the inspiratory expansion is confined to the upper ribs, the body is inclined forwards, the countenance is much altered, with twitchings about the lips and occasionally *risus sardonicus;* there is also, at times, hiccough, nausea and even actual vomiting. Still, these symptoms are not constant; there are cases of diaphragmatic pleurisy without the one or the other of these signs, or they appear in consequence of inflammation of one or more of the organs lying beneath the diaphragm.

Pleurisy may become *complicated* with many acute and chronic diseases, such as: pericarditis, tuberculosis (when it usually appears simultaneously on both sides), pneumonia, bronchial catarrh, inflammation of the mediastinum and of the peritoneum (in purulent pleuritis), caries of the ribs and spine (also in its purulent form), scarlet fever, measles, small-pox, articular rheumatism.

Its SEQUELÆ are: adhesions of the two pleural layers, inveterate bronchial catarrhs, caseous pneumonia, bronchiectasis, etc.

The DIFFERENTIAL DIAGNOSIS between **Pleurisy** and **Croupous pneumonia** is:

Pleurisy.	*Pneumonia.*
Repeated chills.	One chill.
Catarrhal sputa.	Rust-colored sputa.
Stitching pain.	No pain or dull when the bronchial tubes, and stitch-like when the pleura is involved.
Enlargement of the thorax.	None.
Absence of vocal fremitus.	Increased vocal fremitus.
Dislocation of heart, liver, or spleen.	None.
Friction sound.	Crepitant sound.

Its PROGNOSIS varies greatly according to its character. As unfavorable signs Fraentzel considers the following: "1. A double-sided pleuritis, as it almost always indicates tuberculous disease of the pleura. 2. Continued high fever. 3. Rapid increase of the effusion, accompanied with high fever and with great displacement of adjacent organs, unless, after a course of from four to six weeks, signs of commencing absorption are observed. 4. Symptoms of impending suffocation. 5. Discharge of the pus either into the bronchia, with simultaneous production of *pyopneumothorax*, or externally through one of the intercostal spaces. 6. The rapid increase of an effusion which has for a long time remained stationary, because in that case the pleuritis, as a rule, has assumed a tuberculous and hæmorrhagic character. 7. A rapid return or increase of the effusion after spontaneous, or a single or repeated artificial discharge of the same, especially where the quality of the discharged fluid degenerates and becomes purulent, bad-smelling, ichorous, chocolate-like, etc."

THERAPEUTIC HINTS.—Acon., chill; fever; great thirst; quick pulse; dry skin; anxious restlessness; agonizing tossing about; stitching pain in chest; inability to lie on the right side; dry, hacking cough.

Arnica, after mechanical injuries; bruised feeling in chest; expectoration of bloody foam. Is followed well by **Sulph. ac.**, in the traumatic form. Nervous persons; torpidity even to sepsis; dry, cold extremities; head hot, remaining body cool; constant change of position on account of a feeling as though the bed were too hard.

Arsen., profuse serous effusion; great dyspnœa and little pain; weak and cachectic persons; drunkards; intermittent paroxysms; pyothorax.

Bellad., when the inflammation ascends from the diaphragm; plethoric, lymphatic persons, tuberculous women with affections of the cerebral membrane; in exanthematic, typhoid, puerperal phlogosis; after scarlet fever.

Bryon., stitching pain in chest, worse from slightest motion; better when lying on the affected side, not always however; tongue white; thirst great.

Calc. carb., has rapidly diminished the pleuritic exudation.

Canthar., profuse serous exudation; frequent cough; dyspnœa; palpitation; profuse sweats; great weakness; tendency to syncope; scanty urine. (E. Faivre.)

Carb. veg., prostration; sunken features; sallow complexion; emaciation; hectic fever; purulent or ichorous degeneration.

Colchic., arthritic form; sour smelling sweat not alleviating; scanty, turbid, red urine with acid reaction and containing albumen.

Hepar, croupous exudation with a yellow or yellowish-brown tint in face, in scrofulous and lymphatic persons; hectic fever with intermittent paroxysms; empyema.

Kali carb., when the violent stitching pain does not yield to Bryon., especially on the left side with violent palpitation of the heart; the cough is dry and worse towards three o'clock, A.M. Pain in epigastrium; throbbing and stitching pain in back up to the nape of the neck.

Kali hydr., in croupous exudation.

Lauroc., for drunkards and melancholic persons at the beginning with continual suffocating cough; the pain in the pleura is severe and localized; pulse soft though quick.

Mercur., in syphilitic or rheumatic patients when the pain persists after the fever, with copious, not alleviating sweats; frequent chills (feels chilly whenever moving the feet to a cooler place in bed); considerable thirst; gastric and intestinal catarrh with icterus. Stitching pain through to the back when coughing or sneezing; right side.

Nitr. ac., for old people, when the pain leaves and the pulse increases; great weakness and diarrhœa.

Phosphor., in complications with bronchitis; tightness across the chest; dry, tight cough, which is worse from evening until

midnight. Later stages; purulent infiltration; hypertrophy of the right heart; Bright's disease.

Rhus tox., after exposure to wet, or from straining, lifting, wrestling, etc.; tip of tongue red; fever-blisters around the mouth and nose; very restless notwithstanding the pain.

Senega, after the inflammation has passed; copious, mucous secretion with difficult expectoration; tightness and burning in the chest.

Sepia, recommended by Kunkel on the ground of the symptoms 1005 to 1190 in Hahnemann's Chronic Diseases.

Squilla, stitching pain in left side; short, rattling cough, disturbing sleep; inability to lie on the left side; grating of teeth; twitching of the lips which are covered with thick yellow crusts, more on left side; cheeks bright red; perspiring profusely especially on forehead; red tip of tongue, yellowish covering on the back part.

Sulphur, when the pain is in the left side, lower region, going through to the shoulder-blade, and of a more steady nature; lips bright red; in connection with acute articular rheumatism or gout; fibrinous pleuro-pneumonia. Follows well after Bryon. or Rhus tox.

Tart. emet., in pleuro-pneumonia at the commencement, according to Kafka, specific. Dyspnœa, must sit up; palpitation; tingling and pinching in the pit of the stomach. When the healthy side is attacked by œdema.

In neglected or badly treated cases, where the exudation is abundant, or in cases developed in cachectic constitutions, with a pyæmic tendency, we shall have to compare: Arsen., Calc. carb., Camphora., Carb. veg., China, Ferrum, Hepar, Iodium, Kreosot., Laches., Lycop., Sepia, Senega, Silic., and others.

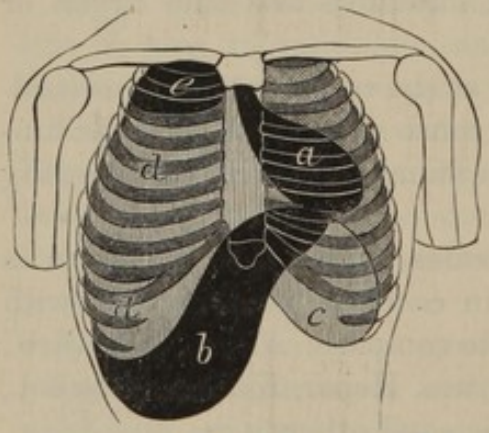
Paracentesis has seldom proved beneficial in acute cases; in chronic cases it may in rare instances be the indicatio vitalis, when the rapidly increasing purulent exudation threatens suffocation. The emptying ought to be effected by aspiration, in order to prevent the entrance of air into the pleural cavity. If, after several tappings, the purulent exudation persistently and profusely returns, the old school of late years opens the pleural cavity and washes it out with warm distilled water until every trace of purulent matter has disappeared, when injections of iodine, or carbolic acid, or other similar substances are made, until by granulation the pleural folds have healed together.

"Radical cure," as it is termed. Compare Fræntzel on pleuritis, in Ziemssen's Cyclopædia, Vol. IV.

Pneumothorax.

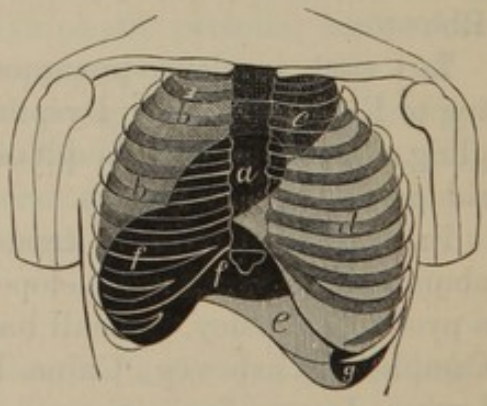
This consists of a collection of air or gas within the pleural sac. As air alone, however, is rarely found in this locality, but mostly in combination with *pus*, *blood*, or *serum*, it is called, according to the nature of the coexisting fluid, either *pyo-*, or *hæmato-*, or *hydro-pneumothorax;* when an exudation of pus or blood *follows* a collection of gas in the pleural cavity, it is termed *pneumo-*, *pyo-*, or *pneumo-hæmatothorax.*

Pneumothorax, whether it be in combination with fluids or not, is always characterized by an enormous extension of the thoracic wall of the affected side, the intercostal spaces of which bulge out. When on the left side, it pushes the heart towards the right; if on the right, it presses the liver down into the abdominal cavity. The lung itself is compressed to a small volume, containing little or no air, and lying close to the spine.



Pneumothorax on Right Side. (After Bock.)

a. Heart displaced.
b. Liver displaced.
c. Stomach.
d. Distention by gas.
e. Compressed lung and tuberculous deposit.



Pneumothorax on Left Side. (After Bock.)

a. Heart displaced.
b. Right lung.
c. Compressed lung and tuberculous deposit.
d. Distention by gas.
e. Stomach.
f. Liver.
g. Spleen displaced.

The gas, which is collected within the pleural sac, consists mostly of carbonic acid gas and nitrogen, with very little oxygen; and in cases where decomposition has taken place, of sulphuretted hydrogen. These gaseous substances may be diffused, and fill the whole pleural cavity of one side, or they may, in rare

cases, be limited therein to a certain portion, in consequence of previous pleuritic adhesions.

The entrance of air into this cavity almost always causes, in a short time, a pleuritis with either sero-fibrinous or purulent exudation; and is occasioned either *by a perforation of the pleura pulmonum*, in consequence of lung diseases, especially pulmonary consumption and empyema, in which case the air enters from the air-cells of the lungs; or *by a perforation of the thoracic wall*, by traumatic causes, when the air enters from without; that *gaseous substances may be formed by means of decomposition in a pyothorax* has of late been greatly doubted.

In cases in which the air fills the pleural sac through the lungs, it takes place almost always quite suddenly, and the patient has a feeling as though something had bursted in the chest, which in fact is the case. At the same time he experiences great difficulty in breathing; he is obliged to sit erect, and can lie only on the diseased side, and for an obvious reason—to keep the sound lung free from any pressure. The worst cases are those which exist in consequence of tuberculosis, gangrene, or carcinomatous degenerations of the lungs. Those in consequence of emphysema or external perforations are not so violent.

Inspection. Enormous enlargement of the diseased side of the thorax; its intercostal spaces bulge out; perfect want of respiratory motion.

Palpation. Total absence of vocal fremitus; liver or spleen displaced downwards; heart towards the middle or the right side of the thorax.

Percussion. Tympanitic sound, unless greatly distended, when it becomes non-tympanitic, or full lung sound. Dull sound in the upper posterior region, where the compressed lung lies, and in the lower regions of the thorax, when effusion exists, changing locality with the patient's change of position.

Auscultation. Absence of respiratory murmur *by full resonant percussion sound;* metallic tinkling when the patient talks, coughs, or inhales deeply. Bronchial breathing and bronchophony, where the compressed lung lies.

In cases where air and fluids co-exist we hear a splashing sound whenever the patient moves quickly, just like water in a half-filled bottle, if it be shaken.

Likewise do we sometimes hear a falling of drops with a metallic tinkling sound, when the patient rises from a recumbent position.

DIFFERENTIAL DIAGNOSIS.—Pneumothorax differs from *emphysema* by its dyspnœa coming on suddenly and growing worse steadily; by its one-sided distention of the thorax, the intercostal spaces of which bulge out; by its want of vocal fremitus, the absence of the vesicular murmur, and the presence of the metallic tinkling sound.

It differs from *large superficial cavities*, by the distention of the thorax and the displacement of heart, liver or spleen, and the absence of vocal fremitus.

THERAPEUTIC HINTS.—For the sudden dyspnœa, Arsen.

When caused by external injury, Acon., Arnica, Staphys., and others.

When in connection with consumption, compare the remedies mentioned there.

For the subsequent inflammation of the pleura, compare Pleuritis and Pneumonia.

Hydrothorax, Dropsy of the Chest.

This is a collection of serum in the pleural sac, without any inflammatory process in that locality. It is mostly found on both sides of the chest at the same time, although one side may contain more fluid than the other. The serum is clear, yellowish or greenish; sometimes reddish, when mixed with blood; it never contains fibrinous substances, as an exudation of pleurisy always does, but in place of it a great deal of albumen. The pleura itself looks pale and dull, without any sign of inflammation; the lung is pressed towards the spine whenever a large amount of such fluid exists, and generally appears œdematous.

Hydrothorax originates mostly in consequence of lung and heart diseases, which cause obstruction to the venous circulation within the lungs; or in consequence of such morbid states of the body as cause the blood to become thin and watery, as is the case in Bright's disease, in certain spleen and liver affections, in anæmia, in intermittent cachexia. It is, therefore, almost always attended by other dropsical conditions.

From this it is apparent that its symptoms must vary greatly. Its most prominent feature, however, is *dyspnœa, which is always worse in a lying*, and *better in a sitting position*, and this for obvious reasons: when sitting the fluid settles to the lower part of the

thoracic cavity and leaves the upper part of the lungs free for respiratory action; whilst in a horizontal position the whole lung becomes overflown and compressed by the fluid. Where there is a great deal of serous effusion *the patient seems to suffocate whenever he turns in bed.* Niemeyer explains this important sign in the following manner: as the fluid is not limited to a certain place, as is the case of pleuritic effusions, it changes its position freely whenever the patient changes his position, following the law of gravitation. Wherever it locates, there it naturally compresses the lungs, makes them unfit for respiration, whilst the uncompressed portion fulfils this office undisturbed. A turn of the body reverses at once the location of the fluid; it now compresses those portions of the lungs which were breathing, and sets others free that were compressed. Ere these can be pervaded by air, the patient has no breath. This explains fully those suffocating fits which such patients experience when turning in bed.

Inspection. Enlargement of the thorax.

Palpation. Absence of vocal fremitus and displacement of heart, liver, spleen.

Percussion. Dull sound as far as the fluid reaches, changing locality in different positions of the patient.

Auscultation. Absence of vesicular breathing where the fluid covers the lungs, but bronchial breathing about the spine, where the lungs are compressed.

THERAPEUTIC HINTS.—**Apis**, great oppression; inability to lie down; absence of thirst; urine dark, like coffee; after taking cold, during desquamation in scarlet fever.

Apoc. cann., inability to speak; catching of the breath; irritability of stomach so great that even a draught of cold water is rejected; suppression of urine.

Asclep. syr., recommended especially after scarlet fever.

Arsen., dyspnœa, worse from any exertion; when lying down at night, if ever so carefully, the patient experiences a sense of suffocation; also when turning in bed; with great anxiety; palpitation of the heart and great dryness; drinking constantly but little at a time.

Aspar., old people with heart diseases.

Bryon., pain in the side; cough, with contraction of the diaphragm; vomiting and splitting pain in the head, excited by any motion; retarded stool and frequent desire to pass water, but only a few drops flow.

Colchic., asthma; œdematous swelling of hands and feet; constant urging to pass water, as from spasm of the bladder, but only little is voided, and that with great pain; heart disease in consequence of acute rheumatism.

Digit., intermitting pulse; pale face; cold skin; flabby, œdematous swelling all over; difficult urination; cyanotic symptoms, with fainting.

Helleb., slow comprehension; slow in answering questions; pale face; griping pain in the bowels, with diarrhœa of a jelly-like slime.

Kali carb., whizzing breathing; oppression worse about three o'clock in the morning; œdematous swelling between the eyebrows and lids, looking like a little bag; insufficiency of the mitral valves; great dryness of the skin.

Laches., suffocating fits, waking from sleep, with throwing the arms about; cyanotic symptoms; swelling of the liver; black urine; offensive smell of feces.

Lycop., dyspnœa worse when lying on the back; constipation; rumbling in the left iliac region; red urine; exceedingly cross after getting awake.

Mercur., after scarlatina; œdematous swelling all over; sweating without improvement; dry, hard cough; inflammation of the genital organs.

Squilla, strong urging to urinate, with scanty and dark urine; continuous cough, with mucous expectoration; œdematous swelling of the body.

Senega, loose, faint, hacking cough, with expectoration of a little phlegm.

Spigel., dyspnœa during motion in bed; can lie only on the right side and with the trunk raised; danger of suffocation when making the least motion or raising the arms, with anxiety and palpitation of the heart.

Sulphur, sudden arrest of breathing at night in bed when turning to the other side; going off when sitting; constipation, or diarrhœa in the morning; liver complaint; red lips.

Tart. emet., much coarse rattling in the chest; expectoration not equivalent to the secretion within; drowsiness; cyanotic symptoms.

Hæmatothorax

Is an effusion and accumulation of blood within the pleural cavity without inflammatory symptoms, brought on either by external injuries of the chest, from stabbing, gunshot wounds, fracture of the ribs, contusions, or from internal ruptures of blood-vessels, carcinoma and tubercles.

The patient complains of sudden dyspnœa, with or without cough; his face grows pale; he faints, has ringing in the ears; darkness comes before his eyes, and the skin is cold.

Physical signs the same as in Hydrothorax.

THERAPEUTIC HINTS.—When from external causes, compare Acon., Arnica, Calend., Eriger., Hamam., Rhus tox. and the like. When from internal causes, they must be considered in each individual case, and reference should be taken to those remedies which are indicated in hæmorrhages from the lungs. Great loss of blood indicates China, and a nourishing diet.

For the subsequent pleuritus, compare the corresponding chapter.

THE HEART.

Auscultation.

First step: To know how the heart works.

The heart consists of four apartments: two antechambers (auricles) and two chambers (or ventricles), which are respectively named from their position, right and left.

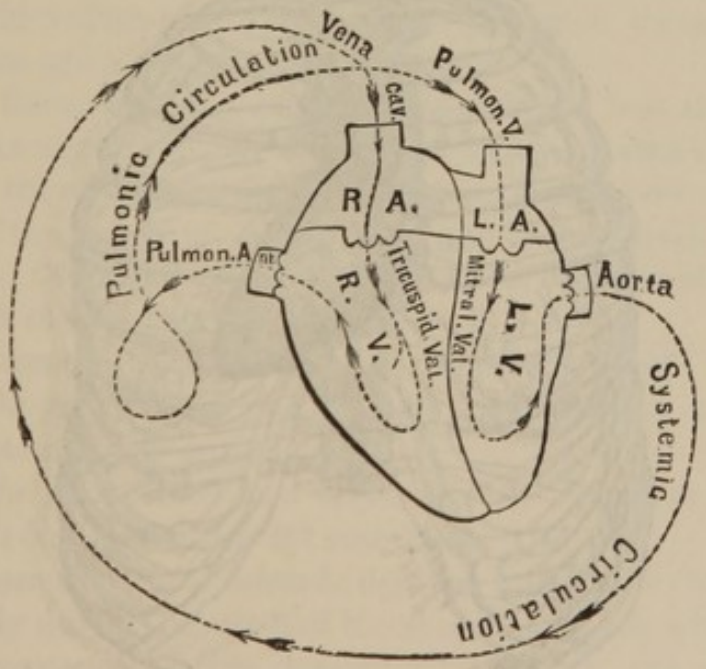
Into the right auricle the venæ cavæ empty all the blood which has been used in the body for its sustenance. From this antechamber a large aperture leads into the right ventricle, which is called the *auriculo-ventricular opening*, and which is guarded by a kind of gate, consisting of three triangular folds (the *tricuspid valves*), opening inward. In the right ventricle we observe another opening, which leads into an artery called the *pulmonary artery*, because it brings the deoxygenized blood into the lungs. This opening is likewise guarded by a set of valves, which, from their half-moon shape, are called *semi-lunar valves*, and which open outward.

This arrangement we find repeated in the left auricle and ventricle. Into the left auricle the pulmonary veins empty all the blood which has been oxygenized in the lungs. From this cavity a like aperture leads into the left ventricle, which is likewise guarded by valves, consisting, however, of only two segments (*the bicuspid or mitral valves*), opening inward.

In the left ventricle we observe also an opening, which leads into an artery called the *aorta*, and which distributes the blood all over the body. This opening is likewise guarded by a set of valves of semi-lunar variety, which open outward.

Now let us see how this apparatus works. The ventricles being fully distended, they immediately and simultaneously begin to contract. On account of the relation of the several valves to

these two cavities, the action of the blood under the great pressure from this contraction forcibly shuts the tricuspid and mitral valves, thus closing the auriculo-ventricular openings, and the same action opens both sets of semi-lunar valves for the escape of the blood. Through the pulmonary artery the dark blood is propelled to the lungs, whence it is returned through the pulmonary veins to the left auricle, thus making the lesser circuit—the *pulmonic circulation.* Through the aortic valves and artery the red blood is propelled through the whole body, whence it is returned through the venæ cavæ to the right auricle, thus making the greater circuit—the *systemic circulation.* As the two ventricles contract, the two auricles dilate, and *vice versa.* The contraction of the ventricles and simultaneous dilatation of the auricles is called the heart's *systole,* and by causing a forcible closure of the auriculo-ventricular valves produce the *first sound* of the heart. The dilatation of the ventricles and simultaneous contractions of the auricles is called the heart's *diastole,* and by forcibly closing the two sets of semi-lunar valves produce the *second sound* of the heart. This explanation of the two sounds of the heart suffices for my purpose, and may be demonstrated to the eye by the following diagram:



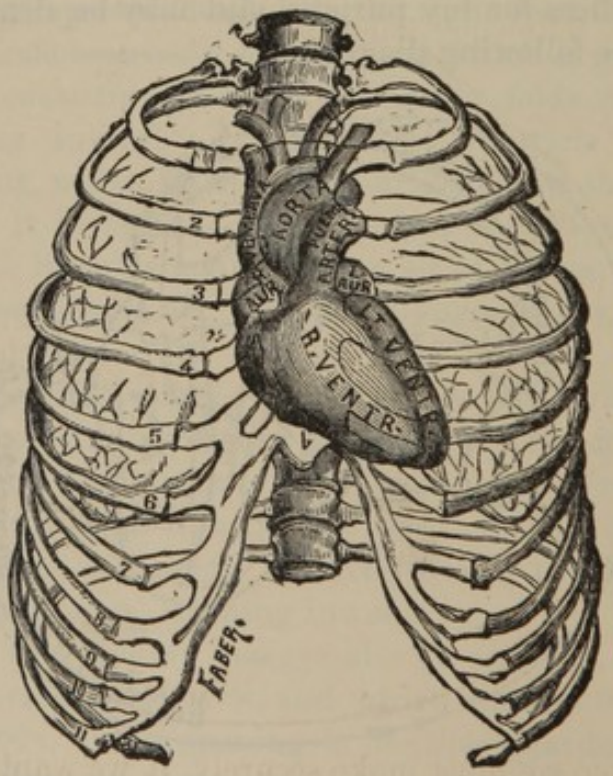
This first step we must make securely, if we want to get along at all towards reaching the goal of diagnosticating heart diseases: the *first sound* is caused by *the shutting of the tricuspid and mitral valves.* The *second sound* is the consequence of the *shutting of the semi-lunar valves.*

Second step: How to find the exact situation of these different valves in the living subject.

In order to find out the position of the heart, and its parts, we must first ascertain *where it strikes against the thoracic wall.*

It does it with its *apex*, and in a majority of cases between the fifth and sixth ribs, about one inch on the right of a line drawn vertically through the left nipple, the person being in an upright position. In persons of a short stature, we find the heart's impulse between the fourth and fifth ribs; and in persons with a long thorax, it may be felt still lower. So also different positions of the body change the place of impulse. In a person lying upon the back, it is observed nearer to the medium line; while lying upon the left side causes it to tilt over more towards the nipple line. This point of impulse we must take as a fixed point for determining the position *of the left ventricle*, which it never fails to represent. The other parts have a constant relation to this.

The *base* of the heart, and consequently the aortic and pulmonary valves, *are almost invariably situated behind the middle of the sternum.*



The *ascending aorta* lies somewhat to the right of the vertebral column, and consequently its sounds and murmurs must always be sought for over the middle and somewhat to the right of the sternum.

The *mitral valves* are situated nearly one inch below those of the aorta, and on the left side of the sternum.

The *tricuspid valves* are to the right of and anterior to the mitral, and they are for the most part covered by the sternum.

The position of the *right ventricle* is variable, and cannot be determined, unless that of the left ventricle and aorta has been previously ascertained; it lies mostly under the lower part of the sternum.

The valves of the *pulmonary artery* are situated under the cartilage of the third rib to the left of the sternum.

The diagram opposite shows the exact position of these parts.

Now, if we remember all this, we shall hear those *sounds which originate in the left ventricle, in the mitral valves*, most distinctly *at that part of the thorax against which the apex of the heart strikes; those sounds which originate in the ascending aorta we shall hear best a little to the right of the centre of the sternum, and from thence upwards; those sounds which originate in the pulmonary artery we shall hear best a little to the left of the centre of the sternum; those sounds which originate in the tricuspid valves we shall hear loudest over the central and lower part of the sternum.*

If we now consider that diseases of the pulmonary valves and the tricuspid valves are of very rare occurrence, we may centre our attention upon only these two points:

1. Upon the sounds of the *mitral valves;* heard best at that part of the thorax against which the apex of the heart strikes; and,

2. Upon the sounds of the *aortic valves;* heard best a little to the right of the centre of the sternum, and thence upwards.

Third step: Of the different morbid sounds and murmurs of the heart.

1. *The left chamber during its systole.*

The first sound, heard clearest at the apex, is proof,

1. *That the mitral valves shut perfectly;* not allowing any blood to regurgitate into the auricle; and,

2. *That the aortic valves and orifice offer no obstacle to the direct passage of the blood out of the left ventricle.*

But, suppose the *mitral valves be deficient*, so that they would not shut perfectly during the rush of blood against them, what would be the consequence of this deficiency? Simply, the stream of blood would not be stopped there, but would re-enter the auricle and thus cause a noise, but no tic.

Or, suppose the *aortic valves* be stiffened or roughened, or the aortic opening constricted, so that the stream of blood in its

course onward would be interfered with, what would be the consequence of such obstruction? The stream of blood would rub against the obstacle and cause a noise or murmur at the same time when the closure of the mitral valves would give the first tic.

Or, suppose the *mitral valves* be deficient, and, at the same time, the aortic valves stiffened and roughened, or the aortal opening constricted, what would be the consequence of this deficiency and obstruction? Well, the stream of blood would regurgitate through the auriculo-ventricular opening, and also rub against the obstacles in the aortic opening, and thus cause a noise but no tic.

How then can we distinguish between these three different affections? In case of *insufficiency of the mitral valves*, the blood regurgitates at each contraction of the heart into the left auricle; and thus it becomes retarded in the whole lesser circuit. In consequence of which the right ventricle must make stronger efforts to drive it onward, and the pulmonary artery, becoming largely distended, contracts the more, thus causing a more violent shock backwards against its semilunar valves, and consequently a louder *diastolic sound* of the pulmonary artery. An increase of the second or diastolic sound of the pulmonary artery is, therefore, almost invariably attending an insufficiency of the mitral valves. We must, then, when we hear a noise instead of the systolic sound at the heart's apex, make sure whether there is also an increased second sound of the pulmonary artery. The valves of this artery are situated under the cartilage of the third rib to the left of the sternum—there we put the stethoscope, and if it turns out so, we may be sure that the noise which we hear at the apex, instead of the systolic sound, is caused by an insufficiency of the mitral valves.

In case of constriction of the aortic opening we hear the systolic sound *and a noise besides*. If we put our ear over the aorta, towards the right of the centre of the sternum, we hear the noise there even plainer than at the apex.

In case of *insufficiency of the mitral valves and constriction of the aortic orifice combined*, we shall find these features united: an increased second sound of the pulmonary artery, and a noise over the aorta.

2. *The left ventricle during its diastole.*

The *diastolic* or *second sound of the heart*, is proof—1, That the aortic valves shut well, not allowing any blood to regurgitate into the left ventricle; and 2, That the *mitral valves* or the

auriculo-ventricular opening offer no obstacle to the passage of blood out of the left auricle into the left ventricle.

But, suppose the *aortic valves be insufficient*, so that they would not close tightly after the blood had been driven through them; what would be the consequence of this insufficiency? The contraction of the aorta would drive some of the blood back again into the left ventricle, and thus cause a *noise* or *murmur* instead of the *second sound*.

Or, suppose the *mitral valves be stiffened, roughened, or the auriculo-ventricular opening constricted*, so that the passage of the blood into the ventricle were interfered with, what would be the consequence of such obstruction? The stream of blood would rub against the existing obstacle and cause a noise or murmur during the diastole of the ventricle at the same time when the closure of the aortic valves would give the diastolic sound.

Or, suppose the aortic valves be insufficient, and, at the same time, the *mitral valves or auriculo-ventricular opening obstructed*, what would be the consequence of this insufficiency and obstruction? Surely the stream of blood would regurgitate through the aortic valves into the left ventricle, and also rub against the obstacles in the mitral valves and auriculo-ventricular opening, and thus cause a noise or murmur, but no diastolic sound.

And how can we distinguish between these different affections? In case of *insufficiency of the aortic valves*, we shall hear a noise or murmur instead of the second sound most distinctly over the aorta to the right of the centre of the sternum.

In case of *thickening of the mitral valves, or constriction of the auriculo-ventricular opening*, the blood accumulates in the lesser circuit, produces hypertrophy, with dilatation of the right ventricle, and an increased diastolic sound of the pulmonary artery much more readily than mere deficiency of the mitral valves. The more constricted the mitral orifice is, the longer will be the time necessary for the flow of the blood into the ventricle, and the more prolonged and louder the murmur. In cases of this kind the vibrations may even be felt and seen.

In case of insufficiency of the aortic valves and constriction of the mitral orifice combined, we shall, of course, find both features united—a noise instead of the second sound over the aorta and a murmur over the mitral valve, with an increase of the diastolic sound of the pulmonary artery.

3. *The left ventricle during its systole and diastole.*

The clear *systolic* sound indicates that the mitral valves close perfectly, and that the aortic opening is not constricted. The clear *diastolic* sound indicates that the aortic valves shut well, and that the mitral orifice is not constricted. But suppose *the mitral valves be insufficient*, and, at the same time, the *auriculo-ventricular opening* constricted, what would be the consequence of such insufficiency and constriction at the same time? The systole would cause a regurgitation of the blood into the auricle, and the diastole a friction of the blood during its passage through the constricted mitral opening, and thus we would hear a *see-saw*, a noise instead of the first, and a noise accompanying the second sound.

Or, suppose *the aortic valves be insufficient*, and, at the same time, *the aortic orifice constricted*, what will be the consequence of such a state?

Undoubtedly the contraction of the heart would cause a noise by driving the blood through the constricted orifice, and during the dilatation of the heart the blood would regurgitate and cause a murmur instead of the second sound.

And how are we to distinguish between these two different affections?

When the mitral valves are insufficient, and the auriculo-ventricular opening is at the same time constricted, we must find also an increased second sound of the pulmonary artery. When, however, insufficiency of the aortic valves and constriction exist in the aortic opening, we hear the murmur most distinctly over the aorta.

A comparison of the diagram on circulation, page 431, will help much in elucidating these complicated states.

All that I have said here of the left ventricle and its valves during its systole and diastole is almost verbally applicable to the right ventricle and its valves. As, however, valvular diseases on the right side of the heart are exceedingly rare compared with those of the left side, and even when present on the right side, they almost always exist to a greater extent upon the left than upon the right side. (H. M. Hughes.) I think it best to break off here, so that I may not bring confusion upon, instead of elucidation to, this subject; and I shall at once proceed to speak of those *morbid sounds*, resembling murmurs, but which have nothing to do with the valves of the heart.

1. **Anæmic murmurs.** "They are ordinarily of the softer kind,

and resemble the blowing of a pair of bellows, but are sometimes harsh and resemble the rougher morbid sounds, as that of filing or sawing." (H. M. Hughes.) They are generally confined to the situation of the aortic or pulmonary valves, or both. They do not follow the course of the large vessels so fully or frequently as do the murmurs arising from disease of the valves. They occur only during the systole of the ventricles; they are not generally heard below the left nipple, because they do not originate in the mitral opening. They are almost always accompanied with a smart, smacking impulse. They generally disappear for a time, while the individual is quiet mentally as well as bodily, if by that quiet the heart assume a natural impulse; and they are always diminished and generally disappear entirely under suitable treatment. (H. M. Hughes.)

The origin of these anæmic murmurs have been attributed: 1, to a watery condition, or a diminution of ordinary viscidity of the blood, in consequence of which the particles of the fluid are more easily agitated and thus give rise to the vibrations which produce the murmur; 2, to the remarkably quick and sudden contraction of the ventricles, in consequence of which the fluid contents of the cavities are propelled quicker through the arterial openings than in health, and thus give rise to greater friction, which produces the murmur, although no actual constriction exists there. (H. M. Hughes.)

2. **Venous murmurs** (nun's murmur, top-murmur) are heard in many young persons in the anterior triangular space in which the external jugular vein descends. It is a continuous murmur, and is generally more audible on the right than on the left side. This murmur disappears when the current of blood is interrupted by pressure upon the jugular vein, by a deep expiration, or by any position of the body in which the head lies lower than the thorax.

It is heard loudest in an erect position and during inspiration.

It is thought to be in connection with anæmia, but Skoda says that he has found it also in young and quite healthy individuals.

3. **Pericardial murmurs.** As long as the inner surface of the pericardium is in its natural condition, slippery and glistening, the heart moves within it without any sound; just as the two blades of the pleura glide over each other inaudibly, as long as they are in a natural condition. Not so, however, when this slippery and glistening surface becomes roughened in consequence

of inflammation and subsequent fibrinous exudation. Then we hear at once a friction sound, which, according to Skoda, may resemble perfectly an endocardial murmur.

How are we then to distinguish between a friction sound caused in the pericardium, and a sound caused within the heart?

Skoda says: "I know no sign by which the friction sounds of the pericardium can be distinguished from the internal murmurs of the heart, excepting this—that the internal murmurs correspond pretty exactly to the rhythm and to the natural sounds of the heart; whilst the pericardial friction sounds seem to *follow* upon the movements of the heart. This distinctive sign is only available when the murmur is somewhat prolonged; if it be of short duration, we cannot determine whether it is endocardial or pericardial." Skoda, p. 253.

To this difficulty still another may be added, viz.: the friction sound may also arise from a roughened condition of that portion of the pleura which covers the unattached parts of the pericardium. The sound is produced by the rubbing of the pleura which covers the free portion of the pericardium, either against the thoracic walls or against the surface of the lungs. Being caused by the action of the heart, it coincides with its movements as completely as though it had been produced within the pericardium. The murmur thus arising external to the pericardium exactly resembles the murmur arising within it, and here we have no means of distinguishing.

The special diseases of the heart I shall arrange under the following heads:

1. Diseases of the pericardium. 2. Diseases of the endocardium and its valves. 3. Diseases of the heart-muscle itself. 4. Nervous diseases of the heart.

I. DISEASES OF THE PERICARDIUM.

Pericarditis, Inflammation of the Pericardium.

The internal layer of the pericardium being a serous membrane, like the pleura, its inflammation presents precisely the same anatomical character as that of pleurisy. We find injection, swelling, and exudation of either a serous or sero-fibrinous, or to the most part fibrinous fluid. In this latter case the fibrin is precipitated upon the walls of the pericardium, and forms net-

work-like, villous masses, which have given rise to the name of *cor villosum* or *hirsutum*, most frequently found in pericarditis complicated with articular rheumatism. During the process of inflammation, sometimes the injected capillaries burst, and thus cause a bloody exudation.

When pus globules form in great abundance, the exudation becomes *purulent*, and, if it undergoes decomposition, it becomes a fetid, discolored, *ichorous* fluid, as in empyema.

In some cases the inflammation does not result in exudation of any kind—*pericarditis sicca*,—in consequence of which, adhesions form without any noticeable symptoms.

The mere serous exudation is most thoroughly absorbed again, while the fibrinous fluid gives rise to adhesions between the heart and the pericardium.

A large quantity of this fluid hinders the heart in its movements and pushes it back from the thoracic walls; at the same time it may compress part of the lung and the large vessels.

It causes also congestion of the lungs, the brain, and the liver, serous exudation into the lower lobes of the lungs, the pleura, and the membranes of the brain and œdema of the lower extremities.

Pericarditis may set in primarily in consequence of external injuries or taking cold; such, however, is very rarely the case; or, secondarily, during the progress of acute rheumatism, which is its most frequent occasion. But it may result also from pleurisy, pneumonia, or ulcerative processes of the ribs, vertebræ, œsophagus, stomach, liver, etc.; or it may accompany morbus Brightii, tuberculosis, diseases of the valves, cancer, intermittent fevers, etc. It occurs, too, in typhus, variola, pyæmia, puerperal and exanthematic fevers.

Chronic forms of pericarditis are caused by long-continued mental depressions, abuse of spirituous liquors, violent exertion of the body, and chronic, gouty affections.

Its Symptoms, if it is a primary affection, or in combination with acute rheumatism, are—

1. More or less violent fever, sometimes commencing with chills, followed by heat, great acceleration of pulse, and palpitation of the heart.

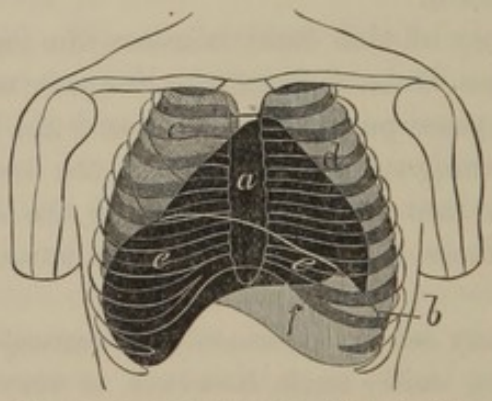
2. As in pleurisy, we must consider the stitch or sharp cutting pain in the region of the heart as a characteristic, subjective sign, which is increased by motion, deep inspiration and external pressure.

3. Dyspnœa is present in almost all cases; sometimes to such a degree that the patient is incapable of lying down at all.

4. Cough is sometimes wanting, but in most cases we find a short, dry, hacking cough.

5. The position of those patients who can lie down is on their left side or on their back.

Pericarditis in complication with pleurisy or pneumonia may in some cases not be diagnosticable during its development even by the most careful physical examination. In complication with tuberculosis, Bright's disease and chronic heart diseases only careful physical examination will lead to its detection, which is also true if pericarditis sets in during the course of grave blood-diseases, such as scarlatina, puerperal fever, etc.



PERICARDITIC EXUDATION. (After Bock.)

a. Pericardial Sac filled with fluid. *b*. Diaphragm. *c*. Right lung. *d*. Compressed left lung. *e*. Liver. *f*. Stomach.

Auscultation reveals the heart sounds very weak, sometimes scarcely audible. This weak impulse of the heart's action is characteristic if we find at the same time on percussion the dull heart sound cover a larger space than normal. But the first physical sign which appears, (although seldom during the first two or three days of the disease) is the *friction sound*, produced by the deposition of fibrinous masses upon the smooth pericardial folds. The now roughened surfaces give this friction sound during their continual gliding over each other in consequence of the motion of the heart. It is frequently heard first and loudest over the base of the heart, but may also be heard first and loudest over any other part of the heart; it does not only accompany the heart sounds, but is prolonged beyond them, is interposed, as it were, between them (Skoda), and may occupy the whole duration of the cardiac movement. When the exudation increases largely,

it grows weaker, and may disappear altogether, but on the decrease of the fluid, it reappears again. It may also be made audible again in some of such cases, by changing the position of the fluid by causing the patient to sit upright, or to bend his body forwards.

Inspection shows in young persons a swelling or bulging out of the precordial region in advanced cases, with a large quantity of exudation. In older persons, where the cartilages of the ribs have become ossified, such enlargements cannot take place.

Palpation discovers in the beginning of the disease a stronger impulse of the heart at its normal place; but later this impulse becomes weaker and finally ceases altogether, when the collection of fluid pushes the heart back from off the thoracic walls.

When there is a loud friction sound, this becomes noticeable also to the sense of touch, and feels like the purring of a cat.

Percussion at first reveals nothing. There must be already a considerable quantity of fluid exudation before we perceive the natural dull percussion sound of the heart spread over a larger circumference; and if the lung happens to be in a position that it covers the filled pericardium, we cannot get a dull sound in spite of even a very large quantity of fluid.

At first the exudation is confined to the base of the heart and the origin of the arteries. Here then we have at first to look for an increase of dulness of the percussion sound. Later, the dull percussion sound may increase in the long diameter, down the heart; and if the effusion is very considerable, also in its transverse diameter, so that if, according to Skoda, the pericardium contains as much as two pounds of fluid, the percussion sound becomes completely dull from the second left costal cartilage to the lower border of the thorax, and from the right edge of the sternum to the middle of the left lateral region.

Secondary pericarditis of course develops itself differently. It being a mere additional symptom or consequence of, or complication with, some other disease, its first onset is hidden by the symptoms of that disease. But, when once developed, its presence must of necessity be indicated by the same physical signs which I have detailed above.

Uncomplicated pericarditis is, of course, much more easily cured than when complicated. In the latter case our prognosis has to be based altogether upon the nature of that complaint with which it is combined.

THERAPEUTIC HINTS.—Acon., chill at the commencement, followed by fever-heat; stitching pain in the region of the heart; impossibility to lie on the right side; great restlessness; frequent sighing and taking a deep breath; feeling of fulness in the chest, dyspnœa; fainting.

Arsen., in consequence of repelled measle- or scarlet-fever-rash; inexpressible anguish and restlessness; worse at night; the patient finds no ease in any position; flushed face; paralytic feeling in the upper extremities; tingling in the fingers; cold perspiration.

Bryon., stitching pain in the region of the heart, preventing motion and even breathing; wants to lie perfectly quiet.

Cact. grand., sensation of constriction in the heart, as if an iron hand prevented its normal movement; acute pains and stitches in the heart; difficulty of breathing; attacks of suffocation, with fainting; cold perspiration in the face, and loss of pulse; palpitation when walking, and at night when lying on the left side.

Digit., copious serous exudation, rheumatism; irregular, intermitting pulse; brick-dust sediment in the urine.

Iodium, in complication with croupous pneumonia; purring feeling in the region of the heart; violent palpitation, increased from the slightest motion, better while lying perfectly quiet on the back; fainting spells.

Kali carb., stitching pain in the region of the heart; swelling between the eyebrows and the upper lids, like little bags; jerking up of the limbs, much frightened when having the feet touched; everything worse about three o'clock in the morning.

Laches., restless and trembling; hasty talking; great oppression; anguish about the heart in rheumatism; irregularity in the beats of the heart.

Psorin., psoric nature; better while lying quietly.

Pulsat., the patient weeps easily, is thirstless, often changes position, has a loose, rattling cough, worse on first going to bed; rheumatic pains, which quickly change locality; inclination to looseness of the bowels; suppressed menstruation.

Rumex, during rheumatism; burning, stinging pain in the left side of the chest near the heart when taking a deep inspiration, when lying down in bed at night.

Spigel., when, notwithstanding the use of Aconite, the fever continues and the rubbing sound commences; stitching pain in the chest from the very slightest motion.

Sulphur, palpitation after going up stairs, with shortness of breath; steady pain in the left side through to the shoulders; red lips; sleeplessness; after suppressed itch.

Tart. emet., in complication with pleuro-pneumonia.

Ver. vir., faintness after rising from a recumbent position; syncope when walking; relieved only by lying down.

Existing complications will no doubt hint to many other remedies.

Hydropericardium, Dropsy of the Pericardium.

The pathological character of this disease consists of a collection of *serum without fibrin*. A fibrinous exudation never takes place without an inflammatory process. The serum is a yellowish, clear fluid; sometimes, if mixed with blood, it is brownish or reddish, and always of alkaline reaction. In renal diseases it contains some urea, and in general icterus the coloring matter and acids of the bile. A small quantity of such fluid is found in most post-mortem examinations. To constitute dropsy of the pericardium, this sac must contain at least several ounces of serum, and it amounts in some cases even to over one pound. When such is the case, the pericardium is distended, is of a dull whitish color, without lustre; the fat upon the heart is gone, and the cellular tissue appears œdematous; the lung becomes compressed and the thorax enlarged.

Dropsy of the pericardium is generally the consequence of a hydræmic condition of the blood, or of diseases which cause dropsical affections in other parts also, such as chronic affections of the spleen, morbus Brightii, cancer, anæmia, dilatation of the right ventricle, etc. It is also found in consequence of conditions which prevent the necessary oxygenation and free circulation of the blood, as in emphysema, in cirrhosed lungs, in defects of the valves of the heart.

Hydropericardium is, therefore, altogether a disease of secondary nature, and its symptoms do not become very prominent, unless a very considerable quantity of fluid collects within the pericardium. Then we observe great *dyspnœa*, which prevents the patients from lying down; any effort to do so at once causes an attack of suffocation; they have to sit up day and night with their bodies bent forwards. The jugular veins swell and dropsical affections appear also on other parts of the body; first in the

lower extremities; then in the genitals; later, within the peritoneum and the pleuræ; finally, the dropsical swelling invades the whole body, and the impeded respiration and circulation cause stupor and death.

The physical signs are: no friction sound; distention of the precordial region in young subjects; impulse of the heart either absent or weak; weak sounds of the heart; and dull percussion sound in a wider circumference than the heart alone would give rise to.

THERAPEUTIC HINTS.—Compare Hydrothorax. The leading features will have to be taken from the fundamental disease.

II. DISEASES OF THE ENDOCARDIUM.

Endocarditis.

Inflammations of the endocardium end either in ulcers, in thickenings of the membrane, or in villous formations of the connective tissue, which in course of time undergo further changes.

1. The **Acute ulcerative** or **Diphtheritic form** is usually found in the left side of the heart, most frequently affecting the mitral and aortic valves, although the walls of the auricles and ventricles are not exempted. At first the lining membrane appears only dirty gray, opaque and dull, but soon shows proliferations in the connective tissue, and a deposition of fibrinous masses, which, after softening and crumbling away, leave ulcers on the surface. As the ulceration eats through one lamella of the valves, the lamellæ underneath stretch and bulge out by the strain of circulation and cause the so-called **Valvular aneurisms**, which, when situated on the auriculo-ventricular valves, project into the auricles, or when on the semilunar valves, into the ventricles; they may enlarge to such a degree, as to form an acute stenosis of the ostium. Ulceration in the ventricles, when complicated with myocarditis, may lead to a so-called **Partial cardiac aneurism**; when situated at the septum, may cause perforation of the same and establish a communication between the two ventricles; the particles of the crumbling masses in the left ventricle may be swept into the terminal arteries and valveless veins of the spleen, kidneys, brain or eyes, producing infarctions in these organs, or

when arising from the right side of the heart, bring about abscesses from embolism in the lungs.

The symptoms of ulcerative or diphtheritic endocarditis may be similar to a *typhoid* or *pyæmic* fever; the heart-symptoms are not characteristic. Usually, however, we hear a loud, systolic and occasionally a diastolic murmur, loudest at times over the apex, at other times over the base, and especially in the neighborhood of the aortic ostium. Of course, in complication with pericarditis the physical signs change accordingly. For this reason endocarditis may easily be confounded with typhoid fever, for in both, the spleen is almost always enlarged, and a roseolar or petechial exanthema is very often present, and frequently accompanied by meteorism. But endocarditis has not the characteristic typhoid curve of temperature, exhibits a remarkable frequency of the pulse and is usually found in connection with rheumatic arthritis, puerperium, chronic valvular disease, pyæmia and traumatic diseases in general.

2. The **Verrucose form** of endocarditis is also more prevalent on the left side of the heart, and takes its favorite seat on those surfaces of the valves which face the current of the blood; then we see it occur on the chordæ tendinæ and relatively seldom on the lining of the ventricles. The verrucose products are the fruit of inflammatory changes in the parenchyma in consequence of irritation. They consist of proliferations of the connective tissue, and appear either as a mere velvety coating on the smooth valvular surfaces, or amount to opaque spots with wart-like, papillous, knotty and cauliflower-shaped excrescences of a red or gray-red color, firm at the base and soft or jelly-like at their points. Parts of these growths may be driven into the general circulation and form emboli. From the left side the kidneys are the organs most liable to infarction, while in affections of the right heart the inferior lobes of the right lung are most liable to be invaded.

Verrucose endocarditis is almost always accompanied by pericarditis, and most frequently complicated with rheumatic arthritis; it also has been found the offspring of childbirth and pregnancy, of old valvular affections, and of acute exanthematic diseases.

Its invasion, during these different affections, generally takes place unnoticed; because it is quite seldom that the patient complains of pain in the region of the heart when attacked in this way. But once established, we observe the following symptoms:

1. *Palpitation of the heart*, and soft, easily compressible and small pulse.

2. *Dyspnœa*, which is the greater the more the respiratory organs become involved in the morbid process, causing quick and unequal respiration, fainting, or congestion of the brain, with headache, delirium, sleeplessness, sopor.

3. Higher degrees of endocarditis are frequently attended by icterus.

Its physical signs are the following:

1. The normal sounds of the heart are stronger, and audible over a larger space than natural—in the beginning of the disease.

2. In place of the first tick we hear, at the apex of the heart, a *noise*, which shows that the mitral valves have become diseased.

3. The *second tick of the pulmonary artery is increased* in consequence of the insufficiency of the mitral valves, causing an overflow in that artery.

4. Percussion at first reveals nothing, but at a later period yields a dull sound over a greater space than natural, because of the dilatation of the right ventricle in consequence of impeded circulation.

Both forms of endocarditis may result in recovery, but generally leave diseases of the valves, either thickening, adhesion, or perforation, and in consequence hereof, dilatation and hypertrophy of the heart.

THERAPEUTIC HINTS.—Compare what has been said under Pericarditis. The characteristics of the remedies acting upon the heart, must be applied here too. In addition, I shall mention only—

Spigel., the most important; waving palpitation, not synchronous with the pulse; pulsating and trembling carotids; purring feel over the heart; rheumatism.

Aurum, rheumatic pains, previously wandering from joint to joint, become fixed in the region of the heart and cause great anxiety; the patient has to sit perfectly quiet in an upright position; palpitation, with irregular, intermitting pulse and short breath, feeling as though the heart ceased beating for a while, and then at once one hard thump is felt.

Bismuth., has not yet been tested in practice, but its pathological effects seem strongly to indicate it; they are: inflamed spots in the endocardium, black coagulum in the heart.

Iodium, according to Kafka, if Spigel. has failed to act favorably during 24 to 36 hours.

Kali carb., where, in place of the first tick, a blowing noise and a louder second tick of the pulmonary artery is heard (Kafka); where there consequently exists already a stagnation in the pulmonary circulation.

Spongia, in consequence of endocarditis, attacks of severe oppression and pain in the region of the heart; all symptoms worse from lying with the head low; inability to lie down at all.

In consequence of **Endocarditis** originate diseases of the valves; which consist either in—

1. *Insufficiency* of the valves; or in—
2. *Constriction* of the valvular openings.

1. Insufficiency of the Mitral or Bicuspid Valve.

Mostly in consequence of endocarditis the valves become shortened and thickened, sometimes by flat calcareous substances stiffened and the fine fringes on their free borders obliterated; at other times the valves are torn from the chordæ tendineæ; seldom are the chordæ tendineæ grown fast to the wall of the ventricle; not unfrequently the capillary muscles are in a state of callous degeneration.

There are also characteristic changes of other parts of the heart attending this disease, namely: always a dilatation and hypertrophy of the left auricle, of the pulmonary veins and artery and of the right ventricle and auricle.

In consequence of these defects of the mitral valves, the blood regurgitates during the systole into the left auricle, thus checking the normal flow of the blood through the pulmonary vein. This causes an accumulation of blood in the lungs, in consequence of which the blood is pressed backwards into the pulmonary artery, causing here a widening of its volume, and, in consequence, a louder second tick. This increased second tick of the pulmonary artery is the most characteristic sign of insufficiency of the mitral valves.

The check of circulation in the lungs causes further dilatation and hypertrophy of the right ventricle, because it requires greater power to force on the accumulated and obstructed blood. By-and-by, however, this increase of power in the right ventricle diminishes again, and thus the veins of the lungs become perma-

nently overcharged with blood; the same result takes place in the venæ cavæ, and, in consequence, the liver, spleen and kidneys grow hyperæmic, which finally ends in dropsy. This stagnation of blood in the lungs causes also dyspnœa, bronchial catarrhs, periodical hæmorrhages from the lungs, passive hyperæmia of the brain, an undulation of the jugular veins, cyanosis, jaundice and dropsy, which usually commences in the lower extremities growing gradually upwards.

The characteristic physical signs are the following:

1. In place of the systolic sound we hear a noise at the point where the apex strikes at the thoracic wall.

2. The diastolic of the pulmonary artery is much increased.

3. The dull percussion sound of the heart extends further in breadth, on account of the dilatation of the right ventricle.

2. Constriction or Stenosis of the Left Auriculo-Ventricular Opening.

It originates mostly in this way that the mitral valves shrink and grow harder and narrower, or that their points grow together, or that the chordæ tendineæ adhere to the valves, or that the valves become covered with calcareous substances. This state of things naturally produces at the same time insufficiency of the mitral valves and therefore we find in the great majority of cases stenosis complicated with insufficiency. The other changes in the heart are like those of insufficiency; the left ventricle, however, grows smaller and the aorta narrower on account of the diminished flow of blood through them.

As in this case the narrowed and roughened orifice does not allow the blood to enter freely into the left ventricle, its passage through this opening is perceptible to the ear—we hear during the diastole a noise at the apex of heart. At the same time the narrowed opening prevents the normal quantity of blood from passing through into the left ventricle, which causes an accumulation of blood in the left auricle; hence, a check of flow in the pulmonary vein; hence, an overfilling of the lungs; hence, a greater backward pressure into the pulmonary artery; and hence all the consequences which I have detailed under the head of defective mitral valves, only much more rapid and much more intense.

Its characteristic physical signs are the following:

1. We hear at heart's apex instead of the diastolic sound a

noise. This noise is sometimes similar to the purring of a cat, so that it even may be felt.

2. The diastolic sound of the pulmonary artery is louder.

3. The dull percussion sound of the heart extends further to the right, on account of dilatation and hypertrophy of the right ventricle.

In cases where the mitral valve is defective and the left auriculo-ventricular opening constricted at the same time, then we hear a noise during the systole as well as during the diastole. The sound of the aorta is mostly weak. The pulse is in most cases weak, not corresponding to the violent palpitation of the heart.

3. Insufficiency of the Aortic Valves.

As soon as these valves do not shut tightly, the blood which has been driven during the heart's systole into the aorta, rushes, during its diastole, back into the left ventricle, causing an abnormal quantity of blood to collect there. To get rid of this the left ventricle has to make greater efforts to rid itself of it; and, in this way, it gradually grows wider and thicker—*eccentric hypertrophy of the left ventricle.* By this increased capacity of the left ventricle the consequences of the defective aortic valves become, so to speak, counterbalanced. For a good while it prevents an overfilling with blood in the pulmonary veins; we observe no slowness of pulse, no decrease of arterial blood, no cyanosis or dropsy. For, although the defective valves retard the circulation and make the blood venous, the hypertrophy of the left ventricle hastens the circulation and makes the blood arterial again.

Therefore, we find that patients thus affected suffer at first comparatively little; the most frequent signs are, congestion of the brain, which manifests itself as dizziness, noise in the ears, flickering before the eyes, headache, hallucinations, red face, etc., as a consequence of the hypertrophied left ventricle.

Later, however, the increased capacity of the left ventricle is not sufficient longer to overcome the consequences of the defective valves, and thus all the symptoms of impeded circulation, as described above, commence to set in. The characteristic physical signs of defective aortic valves are the following:

1. Diastolic noise of the aorta, in consequence of the regurgitation of blood into the left ventricle during the heart's diastole.

2. Greater extension of the dull percussion sound in the heart's long axis, on account of the hypertrophy of the left ventricle.

3. Arched appearance of the region of the heart for the same reason.

4. The impulse of the heart's apex is felt lower down and outside of the nipple line.

5. Strong, jumping pulsation of the carotid arteries.

6. Short, jerking, wiry pulse.—Traube adds:

7. The sounding of the crural artery.

8. The rough systolic after-noise in the carotids.

9. The want of the systolic sound at the heart's apex.

4. Constriction or Stenosis of the Aortic Opening.

The disturbance of circulation is, in such a case, of course, still greater than by mere defect of the valves; and, therefore, the patient soon shows symptoms of deficient circulation; such as paleness, small, thread-like pulse; fits of fainting; coolness of the extremities; anæmia of the brain. At a later period the veins become overcharged with blood, and in consequence we find the patient suffer with dyspnœa, cyanosis, and all the other symptoms of heart disease.

Its characteristic physical symptoms are:

1. Systolic noise, which is often heard in the carotid.

2. Dull percussion sound, somewhat extended in the direction of the longitudinal axis of the heart. In consequence, dilatation and hypertrophy of the left ventricle.

3. Apex lower down and outside of the nipple line.

4. Pulse small, wiry, irregular and thread-like.

In case there exists at the same time a defect in the aortic valves, we may also hear a diastolic noise.

5. Insufficiency of the Tricuspid Valves.

This defect allows the blood to regurgitate into the right auricle, when the heart contracts. Thence the retrograde stream of blood goes into the venæ cavæ and jugular veins; hence we feel a pulsation of the jugular vein, synchronous with the arterial pulse. This retrograde motion of the blood causes overfilling of all the veins, and its consequent results are hyperæmia, cyanosis, hydrops, etc.

Its characteristic physical signs are:

1. *Systolic noise in the right ventricle.*
2. *Swelling and pulsation of the jugular veins.*
3. *More extended dull percussion sound* in the direction of the breadth of the heart on account of its right auricle having become enlarged and hypertrophied.

This complaint is generally a secondary affection, in consequence of diseases of other valves; and then, of course, is attended by all the above-mentioned disturbances and signs.

6. Stenosis of the Right Auriculo-ventricular Opening,

7. Insufficiency of the Pulmonary Valves,

8. Stenosis of the Pulmonary Opening

are, uncomplicated, of such rare occurrence, that even Skoda did not observe them on the living. Skoda, p. 371.

The **Treatment** of all these different valvular affections has to be adapted to each single case, and it is not the diseased valve which points to any particular remedy, but the individual symptoms by which the whole morbid process manifests itself.

Still I might give some general dietetic rules, which are of great importance for the treatment of these different affections.

Patients in whom we find symptoms of congestion of the brain or chest, ought not to eat much animal food; must avoid all sorts of stimulants, and especially coffee, and all kinds of spices. Mental excitements and depressions are alike hurtful to them; and neither too high nor too low a degree of temperature is advisable.

Patients, however, in whom anæmia and debility prevail, ought to eat animal food and drink beer or wine; ought not to overexert themselves, and ought to have all the fresh, pure air they can get.

Acon., usual symptoms of great restlessness, anxiety, fear of death, stitch-pains, hæmoptysis with hacking cough, etc.

Act. rac., catching pain in region of heart, worse on moving or bending forward, preventing inspiration; palpitation and faintness; sexual disturbances in females.

Arnica, heart feels as if bruised; palpitation from any exertion.

Arsen., præcordial anxiety and oppression; palpitation at night with anguish, cannot lie on back; after suppressed eruptions or foot-sweat.

Cact. grand., livid complexion, sunken face; difficult breathing, worse from exertion; constant pain, darting and cutting from region of heart to the left shoulder and down the arm, worse from damp weather or any emotion; œdema, especially of left hand and legs up to the knees; icy cold feet; intermittent pulse. Insufficiency of mitral valves.

Calc. carb., trembling pulsation of the heart, worse after eating, at night with anguish; inclination to take deep breaths; menses too early and too profuse.

Digit., irregular, intermittent beats of the heart; very slow when keeping still, but easily accelerated by any exertion; feeling at times as if the heart stood still, with great anxiety, œdema of the lungs; bluish-red face, or death-like appearance.

Ferrum, chlorotic symptoms; congestion of the head; spitting of blood; palpitation, better from slowly moving about.

Gelsem., "fears that unless constantly on the move her heart will cease beating."

Kali hydr., darts in the region of the heart when walking; after mercurial poisoning; after repeated attacks of inflammation of the heart.

Laches., restless, trembling; anxiety about the heart; hasty speech; suffocation on lying down; weight on the chest; heart feels constricted; numbness of left arm.

Lil. tigr., heart feels as if grasped, with pain and heaviness of left mamma to scapula; pulsations over whole body, and outpressing in hands and arms, as if blood would burst through the vessels; fluttering, awakens her at night, with cold hands and feet covered with cold sweat, with sharp, quick pain in left chest.

Lithium, soreness about the heart, worse stooping; pain in the limbs; finger-joints tender and painful; sleeplessness.

Natr. mur., irregularly intermitting pulsation; fluttering of the heart, with weak, faint feeling and necessity to lie down; coldness of hands and feet; numbness of hands relieved by rubbing; cutting pain in urethra *after* micturition; scanty menses.

Phosphor., congestion of the lungs; tightness across the chest and tight cough; spitting of blood; palpitation worse after eating, or mental emotion; yellow spots on the chest; painless diarrhœa.

Psorin., stenosis of left osteum venosum; purring in the region of the apex; cyanotic lips; dyspnœa and shortness of breath when walking in open air; better when lying down.

Rhus tox., palpitation worse during rest; pain from region of the heart into left arm, with numbness; rheumatism.

Spigel., stitches about the heart; anxiety and oppression; can only lie on right side, or with head very high; least motion aggravates.

Spongia, violent palpitation, awakens after midnight with a sense of suffocation; loud cough, great alarm, agitation, anxiety and difficult breathing; violent gasping respiration; pain in the heart.

Besides compare: Anac., Iodium, Kali carb., Lycop., Naja, Plumbum, Pulsat., Sepia, Sulphur, Veratr.

Heart-clots.

Fibrinous coagulations, especially in the right ventricle and auricle, are very frequently found on post-mortem examinations. If they have originated recently, either soon after death or during death-struggle, they are of a whitish-yellow, generally translucent appearance, frequently jelly-like in consistency, moist and shiny, as if œdematous, and infiltrated with blood on their lower surface; they may extend into the vessels and be drawn out like strings or cords, and can easily be separated from the subjacent parts without injury to either; they are the result of the natural coagulation of the blood during the retardation and final cessation of its current.

But clots may also form during life, either in consequence of a slackening in the current of the blood from some obstruction or loss of propelling force; or in consequence of gradual deposition of fibrine on roughened surfaces produced by vegetations or inflammatory processes of the inner wall of the heart; or in consequence of fibrinous coagula from distant portions of the vascular system, serving as nuclei for more extensive fibrinous clots; or perhaps also in consequence of an increase of fibrine in the blood during certain diseases, or a greater tendency of the blood to coagulate.

These clots, called **True polypi** of the heart, are dull in appearance, dry, rotten, friable, of a whitish-yellow, or gray color, consist of various layers of different color and contain at times deposits of lime salts and in their centre a purulent fluid. They are of various sizes, and usually firmly attached to the inner walls of the heart; they are found particularly at the apex of the left ventricle and in the appendices of the auricles.

The Symptoms of this affection are not characteristic enough to

distinguish it from other heart affections, with which it may be complicated. Heart-clots may occasion sudden death in patients previously in apparent good health.

In other cases they may produce dyspnœa, cyanosis, or pallor of the whole surface, expectoration of bloody sputa, coldness of the extremities, stupor, convulsions, loss of consciousness, death. The heart's action usually is slow, seldom irregularly violent. Dropsical effusions may occur if the patient survives long enough. The physical signs which are occasioned by the clots are of no diagnostical value. The presence of heart-clots may, therefore, be guessed at but cannot be positively proven.

III. DISEASES OF THE HEART-MUSCLE.

Myocarditis, Carditis, Inflammation of the Heart-muscle,

Is found always in connection with peri- or endocarditis; and then, its seat is generally the left ventricle. The substance of the muscle appears yellowish; sometimes fatty degenerated. Its most frequent occasion is acute rheumatism of the joints, but it has also been observed in the course of puerperal and exanthematic fevers.

There are no characteristic signs of this complaint, because it is almost always mixed up with peri- or endocarditis. Mild forms pass over without any consequences; but if it extends to the formation of abscesses, it may cause widening of the heart-muscle, (partial aneurism,) or bursting of the heart-muscle, and consequent sudden death. When the abscess discharges into the ventricle it causes the formation of emboli, with their consequences.

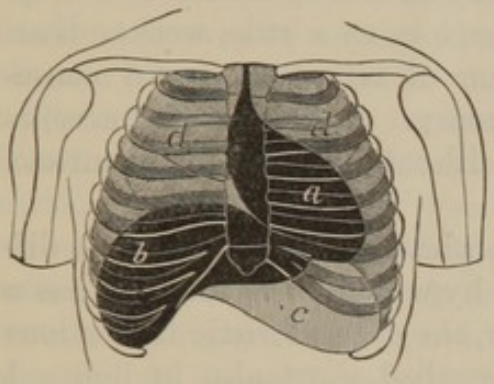
Hypertrophy and Dilatation of the Heart.

Hyertrophy consists of an increase in mass of the heart-muscle, or a thickening of its walls, whereby the inner cavity becomes narrower: this is the so-called *concentric hypertrophy;* or the heart-muscle is increased in thickness, and the inner cavity widened at the same time: this is the so-called *eccentric hypertrophy.*

When, however, the inner cavity is widened, and the heart-muscle at the same time has grown thinner, it is called *dilatation of the heart.*

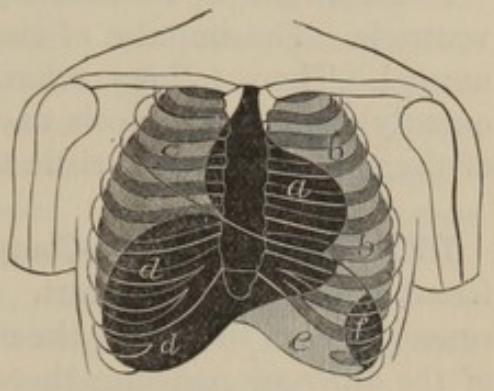
The most frequent of these three forms of altered conditions is *eccentric hypertrophy.*

But it is not always the whole heart that is enlarged or dilated; it is generally only one-half of it that is thus affected. A hypertrophied left ventricle makes the heart longer, reaching further down in the left thorax, while an eccentric hypertrophy of the right ventricle makes the heart broader, so that it reaches further over into the right thorax.



HYPERTROPHY OF LEFT VENTRICLE.

a. Heart elongated.
b. Liver.
c. Stomach.
d. Lungs.



ECCENTRIC HYPERTROPHY OF RIGHT VENTRICLE.

a. Heart widened.
b. Left lung.
c. Right lung.
d. Enlarged liver.
e. Stomach.
f. Enlarged spleen.

Both, hypertrophy and dilatation, are most frequently caused by disturbed circulation, in consequence either of diseases of the valves or diseases of the arteries, like aneurism, or obstacles in the capillaries in the lungs. Also pericarditis and myocarditis, mental excitements, strong coffee, tea, and spirituous liquors have been found exciting causes of this complaint.

Eccentric hypertrophy of the left ventricle manifests itself by an increased impulse of the heart, either heaving in character or jarring the chest-wall, more or less towards the left of the nipple-line and further down, in some cases even as far as the seventh and eighth intercostal space; it is an enlargement of the heart in its long axis, and causes sometimes an intensification of the sounds, especially of the second sound in the aorta, sometimes a metallic clink, increased pulsation of the carotids, murmurs in the larger arteries and also in the small vessels far removed from the heart, and a pulse perceptibly larger in volume under the finger."

"In *hypertrophy of the right ventricle*, the heart's impulse is not increased, except occasionally near the lower portion of the sternum; the apex beats further to the left, but not *lower down*. The

area of dulness is increased in breadth, and the second sound in the pulmonary artery is accentuated."

"In *total hypertrophy* we find a combination of symptoms corresponding to the hypertrophy of the ventricles. It is seldom, however, that we can succeed in declaring with accuracy which half of the heart is the more enlarged." (Schroeter.)

Dilatation is found more frequently of the *right* than of the *left* ventricle. The impulse of the heart is, as a rule, weaker than normal. There follows retardation of circulation, and consequently dyspnœa, cyanosis and dropsy. Pulsation of the veins of the neck are characteristic to a dilatation of the right auricle.

THERAPEUTIC HINTS.—Compare what has been said of the different affections of the heart. As hypertrophy is more or less a consequence of the one or the other, the characteristic indications of the different remedies there described must also fit here. I have only to add:

Arsen., dilatation of right ventricle, with swelling of legs and vertigo; scanty urine without albumen.

Plumb. ac., stitch in the region of the heart during an inspiration, with anxiety; heat and redness of the face; rushing of blood in the region of the heart during a rapid walk; anguish about the heart, with cold sweat; palpitation of the heart.

Post-mortem, after poisoning, has shown that the serous coat of the pericardium is lined with a layer of reddish-gray, fine villous, meshy, firm, exuded lymph. The heart is more than double its natural size. The wall of the left ventricle is more than an inch thick.

Kalmia lat., after rheumatism; hypertrophy; palpitation; dyspnœa; pain in the limbs; stitch-pain in the lower part of the chest; prosopalgia on riglrt side.

Fatty Heart and Fatty Degeneration of the Heart.

Under **Fatty heart** is understood an accumulation of fat in the subpericardial connective tissue, at the apex, in the ventricular furrows along the course of the vessels, at the base around the junction of the auricles and ventricles, at the origin of both the great vessels, and at times embracing the whole heart like a capsule of fat. By its spreading along the course of the fibres of the connective tissue in between the muscular bundles it causes the

latter to atrophy and appear as thin pale stripes and layers. It is usually accompanied with a simultaneous deposit of fat throughout the system, especially in drinkers.

The **Fatty degeneration of the heart** takes place in the primitive bundles of the muscular fibres themselves; they appear cloudy and their transverse striæ disappear; the heart substance thereby becomes pale and yellowish in color, and its texture flabby and friable. It may be acute and chronic. Its CAUSES are: various chronic diseases, protracted suppuration, great loss of blood, tubercular and cancerous cachexia, severe forms of syphilis, profound anæmia, and also diseases of the heart itself, such as pericarditis, endocarditis, valvular lesions, chronic parenchymatous myocarditis. Its acute form occurs after puerperal, typhoid, remittent and exanthematous fevers, after yellow atrophy of the liver and Bright's disease, also in consequence of poisoning with phosphorus, mineral and vegetable acids and alcohol.

The SYMPTOMS of this disease are in no-way very characteristic. Its acute form is usually obscured by the attending primary disease, and a deposit of epicardial fat, which leads to atrophy of the muscular tissue, cannot be distinguished from the true fatty degeneration. Still its occurrence especially in advanced age, in corpulent people, its usually feeble impulse and pulse, its occasional attacks of dizziness and fainting, the presence of the arcus senilis may, by a careful exclusion of all other diseases in which similar symptoms occur, lead to a correct diagnosis.

Both forms may exist for many years if they act only partially destructive to the heart-muscle, or are kept in check by judicious treatment; death may occur from paralysis or rupture of the heart.

THERAPEUTIC HINTS.—An undue accumulation of fat should be prevented by a judicious diet, avoiding fat meat, butter, milk and such articles which consist principally of starch and sugar. Allowable are lean meats, fish, vegetables. Of drinks, malt-liquors should be forbidden, while red wines, claret and the like moderately used may be of benefit. Water is the safest drink. In case of *syncope* an alcoholic stimulant may be of use, and for the spells of *dizziness*, the stooping with the head low down between the knees has been found of great benefit, because it helps mechanically to bring a sufficient quantity of blood to the brain, which the weakened propelling force of the heart alone is not capable of

doing. For the same reason in case of syncope the head should be put low. Among the remedial agents we may especially turn our attention to remedies that have proved beneficial to persons in whom a tendency of growing fat was manifest, e. g., **Arsen., Calc. carb., Ferrum, Sulphur.**

Arnica, recommended by Kafka.

Aur. mur., has relieved when there was a peculiar hacking cough with weak impulse, also where a pain existed as if from angina pectoris attended with blood-spitting.

Digit., where there is slow or irregular action of the heart.

Phosphor., produces all the symptoms of fatty degeneration in different parts of the body.

IV. NERVOUS AFFECTIONS OF THE HEART.

Nervous Palpitation of the Heart

Is an increased action of the heart without any detectable organic lesion of that organ.

The heart's activity is accelerated by irritation of the ganglia which we find imbedded in its substance; by irritation of the cardiac branches of the ganglion stellatum, which take their origin from fibres of the cervical portion of the sympathetic; by irritation of the nerve fibres which originate in the medulla oblongata, run down the spinal cord, pass out from the cord with the spinal nerves and become entwined with the sympathetic; and by irritation of the sympathetic in general, causing a contraction of the vessels, and thereby an increased blood pressure in the aortic system with consequent increased labor of the heart. These are the exitor nerves of the heart's activity; its restraining or inhibitory forces rest in the pneumogastric and its ramifications. An irritation of the vagus slackens the movements of the heart in frequency, but a division of the vagi increases this frequency for the reason that then the exitor nerves have no restraining power to overcome.

The blood too as regards its quantity, as well as its quality, has a powerful influence on the action of the heart.

The Special Causes of palpitation are: mental excitements of all kinds, such as fear, joy, anger and the like; diseases of the brain and spinal cord of various kinds, amongst them: hyperæmia and inflammation of these organs, psychoses, hypochondria,

hysteria, exhaustion from protracted night-watching, or venereal and other excesses; diseases of the abdominal cavity, such as accumulation of gas in the intestines, worms, gall-stones, renal calculi and affections of the genital apparatus; partial hyperæmia from suppressed menstrual or hæmorrhoidal flow; chlorosis and anæmia, and first stages of consumption, gout and different drugs, especially alcohol, coffee, tea and tobacco.

Nervous palpitation of the heart is at times attended with dyspnœa, distress and even pain in the chest, with throbbing of the carotids, flushing of the face, or (oftener) with pallor and cold sweat, with dizziness, faintness, and specks or flashes of light before the eyes. Some persons cannot lie down, must sit up, or cannot lie on the left side. Auscultation often reveals the first sound increased and of a metallic quality; "the second sound is wanting only in cases of tremendous acceleration of the heart's movements, where the heart has not had time fully to complete its diastole." (Schroeter.)

After the attack the absence of murmurs, or of enlargement of the heart, establishes its DIAGNOSIS. The presence of a diastolic murmur excludes the diagnosis of a simple nervous palpitation, because such murmurs never occur without organic changes in the heart.

Its PROGNOSIS depends entirely on the nature of the underlying cause; if that is removable, its effect will cease. In old people with atheroma of the arteries, it may end with apoplexy.

THERAPEUTIC HINTS.—Acon., in young subjects; after fright; after wine.

Arsen., after suppressed herpes circinatus and suppressed perspiration of the feet.

Aurum mur., palpitation, sleeplessness, depression of spirits, with thoughts of suicide, constipation. Motion, wine or beer have no influence.

Asaf., in women, after suppressed discharges, or bodily exertions, with small pulse; breathing not oppressed.

Bellad., with congestion of the head.

Benz. ac., worse at night and when lying; *alternating* with tearing rheumatic pains in the extremities.

Cact. grand., palpitation is preceded by rumbling in the stomach; pains in shoulders and arms; change of life.

Calc. carb., after suppressed eruptions and pimples on the face;

onanism. Cold lower extremities; vertigo on going up stairs, or up a hill; bloating in the pit of the stomach; craving for boiled eggs; copious menstruation.

Camphora, when attended with coldness of the skin; cold extremities; pale face; and sudden oppression of breathing.

China, great weakness from loss of vital fluids; long-continued nursing.

Coccul., tremulous palpitation from quick motion and mental excitement, with dizziness and faintness.

Coffea, after excessive exaltation, joy, surprise.

Digit., attended with apnœa, danger of suffocation; yellow and blue face, worse from motion, from moving the arms.

Ferrum, anæmia; throbbing in all the blood-vessels; soft bellows-sound at the apex, with anxiety in chest and heat rising from pit of stomach; with fear; after bodily exercise; also must move about, can neither sit nor stand.

Graphit., amenorrhœa; pimples on the face about the menstrual period.

Kali carb., throat feels as if squeezed, as if the lungs came in the throat; stitch pain and anxiety in pit of stomach and through the chest; pale grayish color of the face; dizziness in walking; cold feet; scanty menses.

Merc. sol., wakes with nervous trembling; thumping of the heart and agitation as if he had been frightened; weakness at the heart, as if dying.

Moschus, when combined with hysterical symptoms.

Nux mosch., paroxysms after midnight, as if the heart were stopping, and then beating violently, with loud belching; better from drinking *hot* water and keeping warm; must walk about. Hysteria.

Nux vom., after coffee, wine, liquors, spices.

Natr. mur., fluttering, long-standing chlorosis, with torpid skin and suppressed menses.

Nitr. ac., when caused by the slightest mental excitement.

Opium, after alarming events, causing fright, grief, sorrow, etc.

Phosphor., dyspnœa, tightness across the chest, great weakness, and after any little mental excitement; violent hammering in the chest, aggravated by motion, benumbing all over.

Phosph. ac., in children and young persons who grow too fast; after self-abuse, long grieving.

Pulsat., young girls during the time of puberty; from suppressed menses.

Rhus tox., always worse when being quiet.

Secale, with profuse menstruation of a watery discharge; after sexual excesses; comes in paroxysms with spasmodic shocks from right side of chest into right arm and leg; coldness and numbness of right hand and stinging in fourth and fifth fingers; worse at night, after each meal; better in open air.

Sepia, tremulous, intermitting pulsation; suppressed menstruation.

Silic., always after quick or violent motions, such as playing ball, etc.; panaritia.

Thea, after exciting talk and mental exertions, with sleeplessness.

Ver. alb., headache, nausea, vomiting, diarrhœa; bleeding of the nose occasionally; cold perspiration on forehead.

Angina Pectoris, Stenocardia,

Is characterized by: "Pain in the region of the heart, occurring in paroxysms, which usually radiates over the left side of the thorax and the left arm, more rarely over both sides and arms; the pain is associated with peculiar sensation of anxiety and constriction, and often also with other motor, vasomotor and sensitive disturbances." (Eulenburg).

It is often complicated with organic diseases of the heart, such as: faults in the valves, or fatty degeneration of the heart, or atheromatous processes in the aorta, or ossification and contraction of the coronary arteries. In its real nature, however, it is a neurosis and may be classed according to its symptomatology, with the visceral neuralgias, including cardialgia, colic, hysteralgia, etc. For this reason it may be divided:

1. In a **Ganglionic angina pectoris**, when there is either an irritation of the excitomotor nerves with acceleration of the pulse, or a paralysis of the same with retardation of the pulse.

2. In a **Regulator angina pectoris**, when there is either an irritation of the *vagus* with retarded but full and hard pulse, increased force of impulse of the heart, sometimes a temporary arrest of the same and disturbance of phonation and deglutition; or, more rarely, a paralysis of the vagus with acceleration of the pulse.

3. In a **Reflex angina pectoris**, when there is a reflex neurosis of the vagus from diseases of the abdominal organs with the symptoms of irritation of the vagus.

4. In a **Vaso angina pectoris**, when there is either an irritation of the vasomotor nerves which run in the sympathetic, with contraction of the vessels and increased pressure causing arterial anæmia, paleness and coldness of the skin and but little acceleration of the pulse, if any; or, more rarely, a paralysis with opposite symptoms.

These principal types will, in given cases, not always be so clearly expressed, that a recognition or distinction between them could be called an easy matter; the great variability of the circulatory symptoms during an attack of angina pectoris on the contrary hints to the possibility that there exist manifold complications between these different types. Of greater practical importance, however, is it to find out whether these attacks be complicated, as they often are, with an organic disease of the heart, or of an abdominal organ, or whether they be a pure neurosis. If the latter, the prognosis is more favorable, than in the case of such complications where it entirely depends upon the nature of the latter.

THERAPEUTIC HINTS.—E. T. Blake advises the patient on the advent of an attack to take a deep inspiration, and if possible to hold the breath; to use no tea, tobacco, etc., and to avoid all unusual exertions or violent emotions.

Kafka gives the following hints:

Aur. mur.[3], where there is hyperæmia in consequence of stagnation of blood in the heart.

Glonoin.[3], as an intercurrent remedy to prevent the orgasm from getting accustomed to the influence of Aur. mur.

Agar.[3], in the gastralgic or spasmodic form.

Kali carb., when Agar. seems to lose its favorable influence; in other cases, however, **Carb. veg.**, or **Lact. vir.**, or **Lycop.**, are better indicated than Kali carb.

Sambuc.[3], where the pressure proceeds from the spine; in individuals formerly fat and robust and now emaciated in consequence of mental emotions or sexual indulgence.

Phosphor.[3], as an intercurrent remedy, if the pressing pain is worse under the sternum.

Petrol.[3], if the pressing pain is worse between the shoulder-blades.

Kali carb., is likewise indicated in this form, either alone or in alternation with the above. This change of remedies is best re-

sorted to after 8 or 12 days, if improvement seems to come to a standstill.

Chin. sulph., where marasmus is a prominent symptom. So may also **Phosphor.**, or **Cuprum**, or **Ipec.**, or **Veratr.**, be indicated.

Arsen., Laches., Chin. ars., are indicated when dropsical symptoms, with venous hyperæmia and cyanosis make their appearance.

Nux vom., Carb. veg., are important when there is loss of appetite and accumulation of gas in the bowels.

The following remedies have also proved beneficial:

Acon., anxious restlessness with fear of death; general and local tingling.

Arnica, bruised pain in region of heart; fatty degeneration.

Arsen., anxious restlessness with great weakness; great thirst, but drinks little at a time; great oppression; attacks worse after midnight; worse from motion.

Cact. grand., suffocating constriction at throat, with full, throbbing carotids; wants to lie perfectly quiet on the back; mental or physical exertion causes palpitation; attacks come on also in sleep with anxious and frightful dreams. Fear of some organic lesion of the heart which will cause sudden death.

Coca, a girl, climbing a mountain, was seized with an attack and became quite cold. (Richter.)

Cuprum, attacks from excitement and exertion; slow pulse.

Digit., indescribable deathly anguish; death-like feeling in pit of stomach; vertigo and fainting. Pulse feeble, irregular, slow, intermitting; heart's action more vigorous than pulse.

Diosc. vill., neuralgic pain in stomach; cannot speak; laborious breathing; sudden severe pain in middle of sternum, extending to both arms and hands; cannot move; cold, clammy sweat all over; impulse very feeble; pulseless. (F. E. Brown.)

Hepar, when after the attack: dyspnœa; dry, nervous cough all night; pain in neck; faintness and inability to recline.

Laches., choking, constriction and rising in the throat; worse after sleep.

Lact. vir., tightness and oppression of chest waking from sleep; feels as if suffocating, must get out of bed.

Lauroc., suffocation and gasping for breath; violent pain in stomach with loss of speech; eructations tasting of bitter almonds; cold, moist skin; convulsions of the muscles of the face.

Naja trip., similar to Laches.

Ox. ac., violent irritation of the alimentary canal; costiveness; difficulty of breathing; jerking inspiration, and sudden and forced expiration, as though the patient made a sudden effort to relieve himself of intense pain by expelling the air from the lungs. Oppression of the chest, especially towards the right side; pain on expiration; sharp, darting or lancinating pains in the heart and left lung, also in the arms; jerking pains like short stitches, confined to a small space, lasting for a few seconds. Numbness and weakness in back and limbs; peculiar numbness of whole body, approaching to palsy; coldness and complete loss of power of motion in the limbs. Movement excites and aggravates pain. Periodical remission for some hours or days. After other remedies had failed. (P. Dudley.)

Phytol., pain goes to the right arm, or right side.

Rhus tox., pains extending to the left arm; painful stiffness all over, worse in rest.

Spigel., exceedingly sharp pain worse from any motion; frequently indicated; also in complication with other heart affections.

Spongia, suffocating spells at night; worse with head lying low; has to sit up.

Tabac., neuralgia up into the neck; pain between the shoulders; pulse small, irregular, imperceptible; lividity of the skin; features drawn. Deathly nausea with cold perspiration.

Ver. alb., periodical attacks of crampy pain in left chest, or cutting pain with excessive agony, extending to the shoulders; general prostration, skin cold and clammy.

To all these may be added for further consideration: Amm. carb., Amyl. nitr., Angust., Apiol, Arg. nitr., Act. rac., Bellad., Bryon., Cinchona, Caustic., Hydr. ac., Ipec., Juglans cin., Moschus, Sepia, Stramon., Sulphur and Tarant.

V. DISEASES OF THE AORTA.

Aneurism of the Thoracic Aorta.

Aneurism means a dilatation of a short piece of an artery forming a kind of sac at that place. Such dilatations are more frequently found in the aorta ascendens than in the aorta descendens. It can be diagnosticated only when it reaches the exterior thoracic wall. In such a case it renders that part of the chest

perfectly dull on percussion and more resisting to the touch. Also, we often observe on that part a pulsating swelling with a peculiar kind of purring in it, which extends up into the carotid arteries. We find this swelling on the right side of the sternum, between the second and third rib, if the aneurism is an enlargement of the convex part of the aorta. It makes its appearance, however, on the left side of the sternum in the same intercostal space when the aneurism has formed on the concave part of the aorta. Its symptoms are: palpitation of the heart, dyspnœa, asthma, bronchial catarrh, hæmoptoë, swelling of the jugular veins, with cyanosis, œdema of the upper extremities, difficulty in swallowing, hyperæmia of the brain—all symptoms in consequence of its pressure either upon the lungs or the œsophagus, and in consequence of disturbed circulation.

The aneurism of the *arch of the aorta* has its seat behind the manubrium sterni, and a deep pressure with the finger into the fossa jugularis may detect its pulsation and purring.

The aneurism of the *aorta descendens* must be very large in order to cause a duller sound on percussion, or a swelling between the left shoulder-blade and the spine. Its symptoms are the same as those of aneurism of the ascending aorta; and, in addition, it may cause paralysis of the lower extremities, rectum and bladder.

THERAPEUTIC HINTS.—**Ergot.**, has been used hypodermically with success by Von Langenbeck "on account of its power to contract muscular fibres." Two cases (both women) of aneurism of the mesenteric artery are reported as having been cured by **Secale.**[200] (T. M. Pearce, Med. Inv., 1875, Vol. I, p. 48.)

Lycop.[12], is reported by R. Hughes as having cured a carotid aneurism in four days. (British Journal, 70, p. 792.)

Spigel., then **Carb. veg.**, and later **Bryon.** and **Spigel.**, have cured a thoracic aneurism. (C. F. Nichols, New Eng. Gazette, March, 1873, p. 106.)

Spongia, has relieved the paroxysmal, dry, suffocative cough, coming at irregular intervals, especially on lying down, or drinking hot tea, also a distressing fulness in the stomach after eating which attended an aneurism of the descending aorta. (T. C. Fanning, Amer. Jour. of Hom. Mat. Med., Vol. III, p. 10.)

To finish the morbid affections of the thoracic organs I have yet to speak of *the affections of the diaphragm*, that muscle which

forms the partition between the thoracic and abdominal cavity, and which participates greatly in the acts of respiration.

1. Diaphragmitis, or Inflammation of the Diaphragm.

The substance of the diaphragm being a muscular, tendinous tissue, is scarcely ever primarily affected, while its serous lining on its upper surface, a continuation of the pleura and pericardium, and on its lower surface a continuation of the peritoneum, frequently participates in inflammations of these membranes. Symptoms, such as impossibility of taking a deep breath, hiccough, yawning, risus sardonicus, pain in the shoulders, vomiting of green masses, great difficulty in swallowing, even hydrophobia, denote in pleuritis, pericarditis, or peritonitis, an extension of the inflammatory process upon the diaphragm.

Physical signs, are none.

THERAPEUTIC HINTS.—**Acon.**, hard, feverish pulse; thirst; anxious impatience; restless tossing about; painful cough; difficulty in breathing, and pain and heat in the upper region of the abdomen.

Apis, burning pain; must bend forwards from a contractive pain in the hypochondria.

Bellad., in plethoric persons with sympathetic affection, or inflammation of the liver; or in consequence of concrements in liver or kidneys; in pylephlebitis; in puerperal affections; in violent headache with active hyperæmia. (Buchner.)

Bryon., stitching pain in the region of the diaphragm, worse from any motion, from coughing; white, dry tongue without thirst, or else great thirst with drinking large quantities of water.

Cact. grand., feeling as of a cord around hypochondria; congestion to the chest; shooting pains through to the back and up each side of the chest; cannot lie down; dry, tickling cough as from dust in throat.

Chamom., throbbing, burning pain in the region of the short ribs and pit of the stomach, worse from pressure; short and anxious breathing; short, dry cough; vomiting; belching; great restlessness; tossing about; loud complaining, etc.

Colchic., similar to Bryon., for gouty persons; albuminosis.

Digit., after pleuritis; grasping pain; nausea and vomiting; oppression in middle of the chest, difficult breathing; pulse at

first suppressed, then quick; nails blue; face long and cold. In spite of anæmia the patient can bear no high temperature. Better in sitting than in lying. (Buchner.)

Dulcam., in rheumatic affections of the spinal cord. (Buchner.)

Hepar, after Bryon., in fibrinosis, promotes resorption. (Buchner.)

Lycop., sense of constriction from the right side all around the short ribs; cannot stretch himself nor lie upon the back; neither stand upright.

Nux vom., muscular pain of a grasping, rooting nature, with nausea or vomiting.

Rhus tox., worse when lying still; or disposition to move notwithstanding the pain caused by it; commencing on the left side and going to the right.

Stramon., mixture of hyperæmia and spasm in consequence of affections of the spine and the diaphragm with hiccough, sympathetic spasms of the epiglottis and similar symptoms. (Buchner.)

Sulphur, after Bryon., in fibrinosis, promotes resorption.

Tabac., muscular pain caused by renal calculi when incarcerated in one of the ureters; it contracts the longitudinal (Bellad., the circular) fibres. (Buchner.)

Compare Pleuritis and Peritonitis.

2. Singultus, Hiccough.

Hiccough consists in a spasmodic contraction of the diaphragm, by which the air is suddenly drawn in, causing that sound peculiar to hiccough. Its causes may be of a cerebral origin, as in diseases of the brain; it may be the consequence of anæmia from long-standing, weakening diseases, after great loss of blood and vital fluids; of strong mental affections, like fright, anger, etc.

Or, it may be a mere reflex from diseases of the pleura or pericardium; or it may accompany different affections of the stomach, the liver, the intestinal canal. If it takes place in consequence of exhausting diseases, like morbus Brightii, tuberculosis, typhus, cholera, pleurisy, with abundant exudation, large abscesses, etc., it is always a dangerous symptom, continues for days and may be the forerunner of a fatal issue. According to the different causes many remedies may be indicated.

THERAPEUTIC HINTS.—Buchner gives the following:

Arsen., after cold fruit.

Hyosc., when there is inflammation of intestinal organs.
Ignat., especially in children.
Nux vom., after cold drinks.
Pulsat., after cold fruit.
Ruta, when associated with depression.
Stramon., in the most obstinate forms; in children when attended with restlessness in the night and screeming during sleep.
Ver. alb., after hot drinks.

Also the following remedies may come into consideration; Amyl. nitr., Bismuth, Carb. veg., Crot. tigl., Ferrum, Laches., Marum ver., Moschus, Niccol., Ranunc., Ratan., Staphis., Zincum.

3. Neuralgias of the Diaphragm

require **Atrop.**, Rhus tox., Mezer.; in inveterate cases: **Silic.**; in intermitting cases: **Ignat.** and the **Alkalies in combination with arsenious acid.** (Buchner).

4. Rupture and Perforation of the Diaphragm.

Ruptures are caused by violent concussions or heavy lifting; whilst perforations are the result of suppurating processes either in the thoracic or abdominal cavity. When ruptures take place from out of the thorax they are generally attended by dyspnœa, cough, hiccough, suffocating spells and fainting. When from out of the abdomen, by vomiting, colic, obstinate constipation.

Perforation takes place from suppurating processes in the thoracic cavity; for example, in consequence of pyothorax; when the fluid discharges into the abdominal cavity it causes peritonitis.

ABDOMEN.

When we examine the abdomen by *sight* or *inspection* we have to take into consideration the following conditions:

1. **Its appearance in regard to size.**

a. Enlargement of the abdomen may be partial or general.

Partial enlargement depends upon abnormal sizes of the abdominal viscera; either the stomach, liver, spleen, uterus, ovaries, kidneys, glandular structures, bladder, and so on. Also, upon pathological products, as tumors of all kinds, encysted exudation, extra-uterine pregnancy, hernia, and so on.

General enlargement may arise from œdematous infiltration of the abdominal walls; or from accumulation of fat in the subcutaneous cellular tissue, and the omentum; from an accumulation of gas in the stomach and intestines; from a collection of gas or fluid in the peritoneal sac; from large tumors, which fill the whole abdominal cavity; from pregnancy, and sometimes in consequence of frequent pregnancies, the so-called pot-belliedness, and likewise in scrofulous children from enlarged mesenteric glands.

b. The abdomen *appears smaller*—sunken in—sometimes to such a degree that the spinal vertebræ may be felt through the abdominal walls. This we observe in persons who have been starving for a considerable time; also in cases of general marasmus; in strictures of the œsophagus, the cardia, the pylorus, or the duodenum; after severe and long-continued diarrhœa and cholera; it is also a sign of painter's colic from poisoning with lead, and quite characteristic in brain diseases, especially tubercular meningitis.

2. **Its appearance in regard to motion.**

a. Respiratory motion. The diaphragm, moving up and down, makes, as we know, the abdomen participate in the respiratory motions of the chest.

This respiratory motion of the abdomen *is increased* in such affections of the chest as prevent a normal extension of the thorax, as pneumonia, pleurisy, etc.

It is *decreased*, or *ceases altogether*, in inflammation of the peritoneum, in large effusions of fluids or gas in the abdominal cavity, in consequence of large tumors which fill the abdomen, and also from injuries of the diaphragm.

b. Pulsation. We observe it generally in the pit of the stomach, sometimes lower down, nearly to the umbilical region; rarely below the navel, and almost always in the medium line.

This palpitation may have different causes:

1. *Abnormal position of the heart*, its apex lying towards the pit of the stomach. In this case we hear, on auscultation, both ticks of the heart, or noises, if there are any, in the pit of the stomach, and not at the normal place below the nipple.

2. It is caused *by the right ventricle*, which communicates its motion to the left lobe of the liver. In this case we hear also, on auscultation, both ticks of the heart at the pit of the stomach, and at the same time at the normal place.

3. It is caused *by the descending aorta*, and the pulsation extends then further down towards the navel. In this case we hear, on auscultation, only one sound, or one noise, if there be any; this, however, appears a little later than the impulse of the heart at its normal place.

The causes of this abdominal pulsation may be—

a. Relaxed and thin abdominal walls; collapsed state of the abdomen.

b. A curvature of the spine forwards, whereby the aorta comes nearer to the abdominal walls.

c. A thickened left lobe of the liver.

d. Increased impulse of the heart, as in hysteric individuals; or hypertrophy of the left ventricle in consequence of insufficiency of the aortic valves.

3. **Its appearance in regard to the elasticity of its external walls.** We find it *greatly relaxed, hanging down like a loose sack*, in old women, or in those who have given birth to many children; also after absorption of large quantities of fluids, by which the abdominal parietes had been largely distended.

A similar effect is produced by a large accumulation of fat within the subcutaneous cellular tissue.

Large distention of the abdomen, especially pregnancies, some-

times causes the straight muscles of the abdomen (*the m. recti*) to be driven asunder, so that a space of several inches occurs between them, which is very thin, consisting merely of the fasciæ of the oblique muscles, the peritoneum, and the external covering; whilst the recti muscles lie on the sides of the abdomen, forming there a pad-like protuberance. The thin, yielding space in the middle between them, however, bulges out as soon as the person assumes a standing position, not being strong enough to keep the abdominal viscera in their normal position.

4. **Its appearance in regard to the development of its subcutaneous veins.** We observe these veins *largely* distended whenever there exists an obstacle to the free circulation of the blood through the vena cava inferior. This may be caused by stricture or obliteration of the vein itself, or by pressure of enlarged abdominal organs, or abdominal tumors upon it. Some of the blood which cannot pass there is brought by way of the venæ intercostales, mammariæ or axillares, from the lower portion of the body into the superior vena cava.

The so-called *Caput Medusæ*, which is a net-work of enlarged veins around the navel, arises from the umbilical vein, which has not become obliterated.

5. **Its appearance in regard to changes of color.** Here I have to mention the straight line which we observe in pregnant women, extending from the navel to the symphisis pubis, either of a pale yellowish, brownish or even blackish color. This line has been observed quite exceptionally, however, in men, children and also such women as never had been pregnant. We sometimes observe also, whitish or bluish-white stripes like cicatrices on the sides of the abdomen, which are generally signs of previous pregnancy, as other distentions of the abdomen rarely cause them.

On further examination of the abdomen by means of **Palpation**, we may learn, first, the *seat* of the affection.

a. If in the abdominal walls, we are able to raise the affected part during a relaxed state of the abdomen; or, if the abdominal walls be put upon the stretch, we shall observe the swelling in it becoming more prominent.

b. If the seat of the affection is in one of the abdominal organs, the swelling feels deeper and cannot be raised by lifting the relaxed abdominal walls. In order to decide which organ is affected, we, of course, must be entirely familiar with the normal positions of these different organs.

Palpation teaches further the *nature of the swollen parts in the abdomen.*

A *solid* swelling we feel as such, whilst a *fluid exudation* gives to the examining hand the sense of *fluctuation;* provided the sac which contains it be not too much distended, in which case it feels as solid and hard as a stone, and without any fluctuation.

Palpation is also important to become certain of the character of pain which the patient experiences on pressure.

If the pain is increased by slight pressure and ameliorated by gradual deeper and deeper pressure, the affection is mostly of a nervous nature. When, however, the pain increases as the pressure is increased, generally it indicates an inflammatory affection. Pressure upon the stomach frequently causes sickness and belching; pressure upon the colon, desire for stool; and pressure upon the bladder, desire to urinate.

Percussion gives *a tympanitic tone* whenever there is gas or air in the abdomen, unless the enclosed walls are too greatly distended; and *an empty tone* wherever there are solid bodies or fluid effusions in the abdomen.

In this way we are enabled to determine the extent of the enlarged liver, spleen, hardened stomach, tumors and fluid effusions of the peritoneum or ovaries; also, the accumulation of gas in the stomach and intestines, or the peritoneal sac.

Auscultation teaches very little, except what I have mentioned already, in regard to the visible pulsation of the abdomen. Fœtal pulsations.

a. SPECIAL FORMS OF ABDOMINAL DISORDERS.

The organs in the abdominal cavity are many; each of them may be differently affected; consequently the special forms of abdominal affections must amount to quite a considerable number.

I shall speak at first of the *pathological conditions of the stomach.*

Dyspepsia, Indigestion.

Dyspepsia means nothing more nor less than *indigestion.* If we consider for a moment all the causes by which indigestion may be brought about, we will comprehend at once the wide mouth and the big belly of that bag which is called *dyspepsia.* Still if, according to Pope, "One truth is clear, *whatever is, is right,*"

I shall not attempt to destroy this convenient bag, but shall merely endeavor to divide it, for a more intelligent use, into the following four departments:

1. Dyspepsia may be caused by anatomical changes in the digestive apparatus, such as, catarrh, inflammation, thickening, ulceration, eruptions of the membranes of the stomach.

2. Dyspepsia may be caused by quantitative or qualitative alterations of the digestive secretions, such as, alteration of the gastric juice, of the juice of the pancreas, of the secretions of the liver and of the intestines.

3. Dyspepsia may be caused by an abnormal condition of the nervous system, as we observe in consequence of mental excitements, of too great mental exertions, and all such influences as disturb the normal actions of the nervous system.

4. And, lastly, dyspepsia may be caused by the use of irritating or stimulating food or drink; so that we find a whiskey-dyspepsia, a pepper-and-mustard-dyspepsia, a coffee-dyspepsia, and all sorts of other dyspepsias, among which we ought not to forget the ice-cream-dyspepsia and the sugar-dyspepsia.

The symptoms of a disease which has so many different causes, must, of course, be variable, and I shall try to state only its most prominent features.

Dyspepsia is characterized by—

1. *Want of appetite, or morbid appetite: craving for sour, acrid, spicy things, etc.*

2. *Accumulation of wind in the stomach*, and, in consequence of which, belching, oppression, palpitation of the heart.

3. *Formation of acids in the stomach*, and, in consequence, sour, rancid eructations, pyrosis or heartburn, waterbrash.

4. The food does not digest at all, causing vomiting or diarrhœa.

5. The pit of the stomach is mostly sore to the touch; very sensitive to the pressure of clothes; it feels full, and is oftentimes swollen.

6. The patient feels unfit for mental and bodily work; he is morose, irritable, sleeps badly; and, if asleep, his sleep is full of dreams.

7. His face shows a relaxed, tired, weary, sad expression, with sunken, dull eyes; pale grayish or yellowish color and pale lips.

8. His hands and feet are generally cold, and he is very sensitive to the cold.

9. Gradual falling away in flesh and strength.

THERAPEUTIC HINTS.—When we find, in an acute disease, a patient strongly craving a particular thing to eat or drink, it is well and wise for the physician to satisfy this desire. In chronic cases, however, such as dyspepsia, which may have grown big by yielding to morbid desires, it is absolutely necessary to strictly forbid the use of all irritating nourishment, otherwise we feed the animal which we want to destroy.

For special hints, compare Gastric Catarrh, acute and chronic; Liver Affections, Pancreatic troubles, etc.

Vomiting.

Vomiting consists pathologically in an antiperistaltic contraction of the stomach, and a spasmodic contraction of the diaphragm and abdominal muscles, caused either by a direct influence of the brain, or, which is much more frequently the case, an irritation of the nervus vagus, either in the stomach or in the pharynx, or by irradiation—(*sympathetic*).

In cases of sudden and violent vomiting, especially if it happens to otherwise healthy persons, we ought to think:

Of *poison:* to ascertain which we must examine chemically what the patient throws up or what remains of what he partook. It may be arsenicum, corrosive sublimate, nitrate of silver, zincum, or stannum, tartarus emeticus, phosphorus, iodine, different kinds of acid, sulphuric, nitric, or muriatic, alkalies, as caustic potash, or vegetable or animal poisons.

Of *pregnancy:* it sets in sometimes immediately after conception, sometimes not before the first menstrual discharge should come on and does not. It lasts, in many cases, through the first half of pregnancy, in some longer, and in some it passes over quickly or does not set in at all. During parturition I have frequently observed vomiting shortly before the birth of the child.

Of *incarcerated hernia, intussusception,* or *invagination,* which is generally attended with obstinate constipation.

Vomiting from affections of the stomach may have its cause in a simple overloading of the stomach with indigestible food, or in catarrh of the mucous membrane of the stomach; for example, in drunkards; or, in an ulcerated state of this membrane, in cancer of the stomach.

Vomiting may also be caused by diseases of the peritoneum and intestinal canal; from affections of the liver, spleen, pancreas, and urinary organs.

Sometimes it may be merely the affect of the mechanical concussion during hard coughing, laughing, etc.

Vomiting from affections of the brain is found in consequence of external injuries of the head and concussion of the brain; may be caused by strong impressions upon the sensorial and sensitive nerves; the swinging motion of a ship, seasickness, etc.; is found in hyperæmia and anæmia of the membranes of the brain; in inflammation of the brain and its membranes; in different organic diseases of the brain; in megrim and sick headache.

THERAPEUTIC HINTS.—If vomiting be caused by poison, the poison should be removed or neutralized as soon as possible. The stomach-pump is often greatly preferable to emetics.

The antidotes of the different poisons may be found in the Materia Medica, and they are well arranged in Dr. Hering's "Domestic Physician."

If it be caused by an incarcerated hernia, the hernial sac should be put back by taxis or surgical operation. Compare:

Acon., Nux vom., Sulphur, Lycop., Opium, Plumbum.

For vomiting in pregnancy, Nux vom., Veratr., and many others.

For all other kinds of vomiting we must select the remedy in accordance with the indications in each individual case, and its underlying cause.

Acute Catarrh of the Stomach, Gastritis.

Pathologically gastritis is similar to a catarrhal inflammation of any other mucous membrane. We observe redness and velvet-like swelling of the mucous membrane, which is oftentimes covered with a tough, transparent, or whitish-gray slime. In severe cases the mucous membrane appears softened that it may easily be scraped off like a mushy covering; but this change may be the result of self-digestion after death, due to the specific contents of the stomach. (Compare Softening of the Stomach.)

Primarily, catarrh may be caused by taking cold or getting wet, like any other catarrh; but principally it is caused by either too cold or too hot food or drink; or certain kinds of food, like too fat or old meat and fish, pork, sausages, cheese, alcoholic drinks, ice-cream, ice-water; iced milk is still worse than ice-water.

Starvation is not less a cause of it. Also mental exertions and excitement, fright, grief, worriment and the like, may cause it.

Secondarily, we find it in combination with the perforating round ulcer of the stomach; cancer of the stomach; as a continuation of inflammation of the fauces and the œsophagus; inflammation of the intestines; or as a concomitant of typhus, pneumonia, exanthematic fevers and erysipelas.

The heat of the summer is most favorable for its development; no doubt on account of the free use of ice water in a heated stomach; but it also frequently occurs in spring and fall.

Symptoms.—The patient gets morose; feels weak and chilly, with paleness of the face and cool extremities. The chilliness alternates with flushes of heat, red face, and febrile motions. The pit of the stomach feels full, and sore to the touch, so that even the pressure of garments feels uncomfortable. The appetite is gone; thirst, however, is generally present. At the same time the patient feels nauseated; frequently gulps up a sour or flat-tasting fluid; and generation of gas in the stomach swells the region of the stomach and causes belching of wind. In the cases in which the catarrhal affection extends into the bowels, it causes rumbling flatulency, escape of fetid flatus, and mushy, fetid discharges. At the commencement of the disease the bowels are mostly constipated, and the urine is dark-colored. Toward the close we frequently observe the formation of herpes labialis or hidroa.

In some cases gastritis is attended with a higher or less degree of fever, and then it goes under the name of **Gastric fever.** The fever generally augments in the first days, shows evening exacerbations, and may last from one to two weeks, when the patients gradually recover.

In other cases, which generally are characterized by great obstinacy, there is an abundant secretion of tough mucus, not only throughout the alimentary canal, but also in the bronchial tubes and the urinary organs. This form is known under the name of **Febris mucosa.** The patients become greatly exhausted and apathic, and after a slow recovery are very liable to relapses.

Still another form is the so-called **Bilious fever,** when the gastric catarrh is complicated with an abundant secretion of bile. Here the pulse is much more frequent and the temperature much

higher than in an ordinary gastric fever; there is vomiting of bitter and green masses; the liver is somewhat swollen, and a light icteroid coloring of the white of the eyes may appear, until finally after a weeks duration, the whole train of symptoms is wound up with a bilious diarrhœa. In the first days it is often difficult to discern between these forms of gastric catarrh and **Typhoid fever.** However, gastric fever is generally preceded by dietetic faults; its temperature ranges never very high, nor does it show the characteristic step-like increase of a typhoid fever temperature, and the fever blisters around the mouth, a frequent occurrence in gastric catarrh, are extremely seldom met with in typhoid fever.

THERAPEUTIC HINTS.—Acon., after taking cold; stitch-like, burning, and pressing pain in the pit of stomach, with anguish and fear of death; fever with great thirst and vomiting.

Ant. crud., total loss of appetite; tongue thickly coated, yellow or white; great thirst *at night;* nausea; belching, with taste of what had been eaten; vomiting; after bad, sour wine; after bathing.

Apis, painful sensitiveness in the pit of the stomach, with burning; painless, yellow diarrhœa.

Arnica, after a blow or fall; sense of fulness in the pit of the stomach; belching, with taste of putrid eggs; hot head, remainder of body cool.

Arsen., nausea and vomiting, worse from rising up; quick prostration; anxious restlessness; great thirst, but drinking little at a time; after abuse of ice, ice-water, ice-cream, vinegar, sour beer, tobacco (chewing), alcoholic drinks.

Bellad., cutting pain in the stomach, worse from motion and pressure; vomiting; gagging; hiccoughing; great thirst, but drinking makes it worse, consequently the patient abstains from drinking.

Bryon., stitching pain in the region of the stomach, worse from motion, and especially from a misstep; tongue coated; dry without thirst; or else great thirst day and night, and drinking large quantities; constipation. In warm weather, and after eating of flatulent food.

Carb. veg., great deal of belching, sour and rancid; burning in the stomach; bloatedness of the abdomen; disgust for meat; desire for acids; after debauching.

Chamom., bitter taste in the mouth; vomiting of bile or green mucus; belching; rumbling in the bowels; hot and red face; much excited, as if beside himself; sleeplessness; after offence, vexation, anger.

China, feeling satiated all the time; however, when trying to eat, he can eat something, but feels bad afterwards, and cannot say how; fulness in the stomach and bowels; belching; sour rising; cold feeling in the stomach; great lassitude and weakness.

Euphorb. cor., sudden nausea, vomiting and diarrhœa of watery fluid, with sinking, anxious feeling of the stomach; faintness; slow and weak pulse; cool skin; cool hands and feet, which become affected with cramps.

Hydrast., dull, *aching* pain in the stomach, which causes a very weak faintish feeling, "goneness" in the epigastric region; acidity; constipation. "After drugging." (W. Goodno.)

Ipec., constant nausea proceeding from the stomach, with empty eructations and accumulation of much saliva; easy vomiting; diarrhœa; after eating sour, acrid things; sour, unripe fruit, berries, salads, etc.

Iris ver., great burning distress in the epigastric region; vomiting with diarrhœa, accompanied with great prostration; burning in the mouth, fauces and œsophagus; and headache.

Kali carb., emptiness and gone feeling in pit of stomach; after eating, fulness, heaviness and pressure in pit of stomach; vomiting; dry stool; turbid urine; constantly chilly.

Nux vom., always after the use of tinctures, mixtures, tonics, vegetable pills, coffee, wine, condiments; after mental overexertions; in leading a sedentary life; bitter or sour taste; sour belching; fulness and pressure in the stomach; constipated bowels; dizziness, headache; irritable, cross; all worse in the morning, in the open air and after eating.

Podoph., food turns sour after eating; belching of hot flatus, which is very sour; great thirst; vomiting; the stomach contracts so hard and rapidly in the efforts to vomit that the wrenching pain causes the patient to utter sharp screams; vomiting of bilious matter, mixed with blood.

Pulsat., no appetite; no thirst; bitter taste in the mouth; everything tastes bitter; dizziness when rising from a chair; chilliness; after fatty substances—pork, pastry, rancid butter, etc.

Rumex, shootings from the pit of the stomach into the chest in various directions; aching pain in the pit of the stomach, and

aching and shooting above it in the chest; fulness and pressure in the pit of the stomach, extending towards the throatpit; it descends towards the stomach upon every empty deglutition, but immediately returns; flatulence; eructations; pressure and distention in the stomach after meals.

Sanguin., nausea, with headache, chill and heat; vomiting, with severe painful burning in the stomach, and intense thirst; red tongue; red and dry lips; hot and dry throat; tickling cough.

Sepia, sensitiveness of the pit of the stomach to touch; bloatedness of the abdomen; congestion and heat of the head; headache; tongue coated *without lustre;* often sore and covered with little blisters on the edges and tip; sour smell from the mouth, and likewise of the urine, which is clear like water, or pale-yellowish; constant drowsiness; anxious dreams, and great fever heat; especially in children, from taking cold when the weather changes.

Chronic Catarrh of the Stomach

Is, in many cases, only a continuation of an ill-managed, acute attack, but it may grow out of too free a use of spirituous liquors, coffee, chewing and smoking of tobacco; it may have its origin in gluttony, sedentary habits, mental exertions, long-continued mental emotions, etc.

Secondarily, it has been observed accompanying heart, liver, lung and pleura affections; anæmia, chlorosis, Bright's disease, marasmus, tuberculosis, gout, cancer, hæmorrhoids.

Its most permanent symptoms are, *indigestion or dyspepsia, belching after eating*, mostly sour, and attended with heartburn; *pressure and full feeling in the epigastric region, with actual distention of the same.*

Other symptoms are, nausea and vomiting, loss of appetite, or perverted appetite, or ravenous hunger, with gaping and faintness; after eating always pain in the stomach. Such patients feel weak; they are morose, irritable and quite sleepy through the day. By-and-by their skin becomes pale and dry, and they become emaciated.

Its progress is a slow one, and whether curable or not curable, depends entirely upon its combination with other diseases.

On the authority of Kafka I shall give the following therapeutic remarks:

Aching or burning pain in the pit of the stomach: increased from

palpation or pressure of the clothes; and *distention of the epigastric region*, Bellad., Phosphor., Arnica, Arsen.

Aching in the pit of the stomach, not much increased by external pressure, Bellad., Phosphor., Hepar, Ignat., Nux vom., Arnica, Calcar., Zincum.

Aching in the pit of the stomach, not increased by external pressure, Carb. veg., China, Chin. sulph., Capsic., Natr. mur., Lycop., Sulphur.

Sour stomach, with sour belching and taste; heartburn; gulping up and vomiting of sour matter, Nux vom., Calc. carb., China, Phosphor., Sulphur, Kali carb., Carb. veg.

Sour stomach always after eating, Nux vom., Kali carb., Natr. mur., Sulphur, Phosphor., Sepia.

Rancid belching, Pulsat., Carb. veg., Magn. mur., Sulphur., Asaf.

Foul belching, Sepia, Phosphor., Arsen., Arnica, China, Ferr ac., Mercur.

Much mucus in mouth and stomach, Pulsat., Amm. mur., Natr. mur., Arnica, Sulphur.

Accumulation of bile in the stomach, with bitter taste, bitter belching, and vomiting, Chamom., Pulsat., Arsen., Ipec., Nux vom., Veratr.

Much wind in the stomach, with distention, Nux vom., Carb. veg., Ignat., Arnica, Sulphur, Arsen., Phosphor.

Distention of the abdomen, Carb. veg., Nux vom., China, Arnica, Natr. mur., Phosphor., Sepia.

Relief from eructations, Laches., Carb. veg., Ignat., Lycop., Tart. emet., Nux vom., Sulphur.

Relief from wind passing down, Nux vom., Carb. veg., Pulsat., China, Chamom., Lycop.

Worse from accumulation of flatulence, Nux vom., Carb. veg., Pulsat., Ignat., Natr. mur., Phosphor., Arnica, China, Chamom., Kali carb., Coloc.

Slow digestion, Nux vom., Ignat., Phosphor., China, Opium.

Total loss of appetite, Nux vom., China, Sepia, Natr. mur., Arsen.

Feeling of emptiness and hunger in the stomach without desire for food, Natr. mur., Opium, Arsen.

Ravenous hunger, Nux vom., Calc. carb., China, Iodium, Natr. mur., Phosphor.

Worse after eating, Nux vom., Calc. carb., Phosphor., Natr. mur., Sepia, Sulphur.

Disgust against meat, Sulphur, Sepia, Petrol., Mur. ac., Natr. mur., Carb. veg., Arsen.

Sleepiness in the daytime, Natr. mur., Pulsat., Sepia, Calc. carb., Carb. veg., Chinin., Kali carb.

Great weakness and loss of energy, China, Chin. sulph., Arsen., Phosphor., Iodium, Ferr. ac.

Gastritis Toxica seu Caustica, Inflammation of the Stomach in consequence of Poisoning.

Such poisoning is caused by concentrated or diluted mineral acids, caustic alkalies, salts and metals, acrid, vegetable, or animal poisons, and ethereal oils.

Diluted mineral acids change the epithelium and the superficial layers of the mucous membrane of the stomach into a soft, brownish, even blackish mass. Concentrated mineral acids change all layers of the mucous membrane into a blackish mass; the other coats of the stomach become softened, and, in some rare cases, perforated—eaten through. The blood in the vessels of the stomach and in the adjoining larger vessels is black and tough, like tar. Caustic alkalies—for example, the kali causticum or ammonium causticum—change the epithelium and the mucous membrane of the stomach to a pappy, discolored mass; they destroy and perforate the coats of the stomach much more readily than acids do.

Salts of metals, like verdigris, corrosive sublimate, argentum nitricum, tartarus emeticus, likewise arsenicum and phosphorus, cause brown scurfs, surrounded by injected and swelled portions of the mucous membrane of the stomach. Acrid, vegetable and animal poisons, and ethereal oils cause a highly inflamed state of the mucous membrane of the stomach.

Poisoning is characterized by the following symptoms: violent pain in the stomach and bowels; vomiting of slimy or bloody masses; slimy, diarrhœic discharges from the bowels, mixed with blood; and tenesmus; the features of the face become distorted; there is sudden loss of strength; coldness of the extremities; and cold, clammy perspiration; the pulse is small and thread-like.

If the patient informs us what he has swallowed, our diagnosis is safe enough. If not, the ejected masses will have to be examined. Mineral acids and caustic alkalies leave their traces also upon the mucous membrane of the mouth and fauces.

THERAPEUTIC HINTS.—If we see a case soon after the swallow-

ing of poison, this poison must be either removed or neutralized —acids by alkalies and alkalies by acids.

Chronic consequences require: after acids, Calc. carb.; after alkalies, Nitr. ac.; after ethereal oils, Nux vom., Arsen.; after metals, Hepar.

Gastralgia, Cardialgia Nervosa, Cramp of the Stomach.

This affection is characterized by attacks of great pain in the stomach, which come at intervals, leaving the patient free from pain between the attacks; there is no structural change of the stomach effected by it. We frequently find this complaint, however, in connection with anæmia, chlorosis, tuberculosis, or great loss of vital fluids; also with chronic catarrhal affections of the stomach, the round perforating ulcer, and cancer of the stomach; also with diseases of the womb, as falling or dislocation of the womb; catarrh or ulceration of the mouth of the womb; too scanty or too profuse menstruation; also, with diseases of the spine, especially such forms as present an intermittent character; and finally we observe it frequently in consequence of depressing mental emotions; chilling the stomach by drinking ice-water or eating ice-cream while being heated; or after the use of lemon-juice, or other acid fruits, coffee, fresh bread, and hot cakes, and other things which are difficult to digest.

The attack usually commences with a feeling of pressure in the pit of the stomach, frequent yawning, coldness of the extremities, and an uncomfortable feeling in the middle of the spine, which induces the patient to bend backwards frequently. Sometimes, without such premonitory signs, a violent pain in the stomach sets in at once, which may be various in character—pressing, drawing, burning, boring, gnawing, cramp-like, etc., amounting sometimes, to such a degree of severity that the patient faints away; his face appears collapsed, his extremities become cold, and his pulse small and thready. The pain seems to radiate from the spine and reflect upon the chest, where it causes asthmatic symptoms; or, it reflects upon the œsophagus, causing the so-called globus hystericus; or, upon the larynx, causing choking; or, upon the sympatheticus, causing spasmodic laughing and crying; or, upon the nerves of the cranium, causing hemicrania; or, upon the intestines, causing pain in the bowels and diarrhœa. The pain is oftentimes relieved by hard

pressure upon the stomach, but sometimes the patient cannot even bear the pressure of the clothing. The pit of the stomach is, in some cases, distended, in others it is drawn in; often we observe a pulsation in the epigastrium.

The attack generally ends with belching of wind, vomiting of watery, sour fluids, passing of watery urine, and with a gentle perspiration. In some cases there is a great accumulation of wind in the stomach, so that the pit of the stomach and the bowels are greatly distended, with constant belching and rumbling in the bowels. Belching and passing wind generally brings relief.

THERAPEUTIC HINTS.—Abies nigra, continual distressing constriction just above the pit of stomach, as if everything was knotted up, or as if a hard lump of undigested food remained there.

Abrot., feeling as if the stomach were hanging or swimming in water, with a sense of coldness. Pains cutting, gnawing, burning, contracting, stinging, mostly worse at night. Never entirely free from pain.

Arg. nitr., in the middle between the xyphoid cartilage and the navel a small spot, which is very sensitive to the slightest pressure; from this spot a very severe pain spreads to the hypochondriac region, into the back, up into the shoulders, even to the head; gradually increasing in intensity, and as gradually leaving again.

Arsen., burning pain, as of red-hot coal; pit of stomach sensitive to slightest touch; vomiting of ingesta as soon as taken; anguish; restlessness; dyspnœa; fainting; pale, earthy face; worse from eating and touching; better from warm applications; brought on by eating ice-cream or drinking ice-water.

Asaf., pressing, cutting, stitching pain in spells; eructations of a smell like garlic or feces; accumulation of gas; constantly pressing upwards, none downward; gulping up of rancid, acrid fluids; obstinate constipation. Pain in paroxysms; better from eating; worse when stomach is empty.

Bellad., gnawing, pressing, crampy, drawing, wrenching pain, which compels the patient to bend backwards, and to hold his breath; pain extending through to the spine, with tired feeling in the spine; great thirst, but feels worse after drinking; face hot, red, bloated; pupils enlarged; especially for the female sex, when the menstrual period has been disturbed.

Bismuth., sense of heaviness like a weight in stomach; intense pressure in a defined spot with pain in the spine, compelling the patient to bend backwards.

Bryon., pressing pain, as of a stone or a load in the stomach; worse from eating or drinking; from any motion; better when lying quiet on the back.

Calc. carb., pressing pain, as of a load or stone in the stomach; or from the abdomen rising up into the throat; sour belching and vomiting; better from motion; too profuse catamenia.

Calc. hypophosph., sudden appearance of the attacks; absence of gastric catarrh; entirely free at intervals; sensation as if the pain and distress were caused by wind; spreading of the pain upwards, never downwards. Attacks appear suddenly two hours after each regular meal, and are appeased by taking a cup of milk or other food carefully chewed. Without this the pain steadily increases, extends to the spine, into the chest and throat, and is accompanied by a rising of clear, white, brackish, sour froth, and a gnawing in the stomach. (F. G. Oehme.)

Carb. veg., after Nux vom., burning pain, extending down to the small of the back and up to the shoulders; sour, rancid belching; cold limbs; cold sweat; worse from lying down; after rich living; drinking of spirituous liquors.

Chamom., when sitting or standing the pain doubles him up; in bed he tosses about in great agony; hands and feet cold; after anger or vexation.

Chelid., gnawing, grinding pain, ameliorated by constantly eating something.

Coloc., violent cutting, tearing pains which, from different parts of the chest and abdomen, concentrate in the pit of the stomach; relieved by hard pressure and bending double; after vexation and indignation.

Ferrum, pressure in the stomach; vomiting of ingesta, and better afterwards; worse after drinking milk; chlorotic and anæmic individuals.

Gelsem., sensation of a heavy load with weight; tension and dull pain; sometimes with empty, faint sensations in the epigastrium, and a false hunger—a kind of gnawing.

Graphit., anæmic, chlorotic patients. Dysmenorrhœa; constant yawning and bloatedness of the stomach.

Ignat., gnawing, cutting pain in the stomach; faint feeling; false hunger; collection of water in the mouth; nausea and vom-

iting of mucus; poor digestion; bloated stomach; pale, watery, profuse urine; after grief or poor living; habitual smoking.

Leptand., sharp, cutting pains at intervals in the lower part of the epigastrium; constant aching distress; worse from drinking cold water; after rising; great desire for stool, that cannot be retained one moment.

Lycop., brought on by eating fruit; flatulency; flowing saliva; constipation; pain better from bending.

Nux vom., pressing, constricting, clawing pain in the pit of the stomach, extending into the chest, or towards the small of the back and to the anus, which is drawn in; worse after eating and drinking; better from belching, after vomiting, from bending forward and rubbing the pit of the stomach; great irritability; headache; loss of appetite; or hunger, with fear of eating; belching, vomiting, and gulping up of sour substances; constipation; hæmorrhoids; suppressed menstruation; complaints from the use of coffee or liquors; sedentary life; night-watchings; anger and worriment; always after previous use of nostrums.

Petrol., pressing, drawing pain, ameliorated by constantly eating something. Compare Chelid.

Phosphor., a singular rising of the swallowed food by mouthfuls; gnawing pain; worse from motion; pain worse after eating; during the presence of morbid hunger eating relieves for a short time; decidedly better when keeping warm in bed.

Phosph. ac., violent pressure in pit of stomach through to the back; worse from touch. Urine white and almost as thick as milk.

Plumbum, the patient bends backwards during the spell; gets better from hard external pressure upon the stomach; afterwards yellow appearance of the white of the eyes; badly-smelling sweat of the feet; during paroxysm, abdomen hard like a board; pharynx feels constricted; hands and feet cold.

Pulsat., dizziness when rising; loss of appetite; no thirst; sour or bitter vomiting; after eating fat meat, cakes, pastry, and drinking whiskey; the attacks are worse in the evening.

Rumex, "shootings from the pit of the stomach into the chest in various directions; aching pain in pit of stomach, and aching and shooting above it in the chest; fulness and pressure in pit of stomach, extending toward the throatpit; it descends toward the stomach with every empty deglutition, but immediately returns. Pressure and distention of stomach after eating; stitch-

ing, cutting pain in pit of stomach; worse on movement." (W. K. Knowles.)

Staphis., after indignation.

Sulphur, pain in right hypochondrium extends over stomach to left; cannot lie on either side; when lying on back the pain spreads to chest under sternum and hinders respiration; must get up and walk about.

Ver. alb., pains radiate to back and shoulders; increase slowly and decrease slowly, and are attended with a shaking chill, and cold hands and feet.

Ulcus Ventriculi Perforans (rotundum, chronicum), the Round Perforating Ulcer of the Stomach.

In four-fifths of the cases the ulcer is situated upon a region bounded by the posterior wall, the lesser curvature and the pyloric region; the rest of the surface of the stomach appears to be affected in only one-fifth of the cases; it was also frequently observed in the duodenum, in cases of Chickahominy diarrhœa. Only one ulcer is usually found; exceptionally there are two, three, or more. Its size varies: it may be smaller and also much larger than a three-cent silver piece; its shape is round, sometimes oval; and in cases where several ulcers join, it is irregular. On the inside of the stomach it is largest, and grows smaller in its progress of eating through the different layers of the stomach, so that it assumes a funnel-shaped appearance. When it reaches the serous membrane of the stomach it causes peritoneal inflammation and fibrinous exudation, which cause adhesions with the adjoining organs, as the pancreas, liver, omentum and colon. When even this last or external membrane is eaten through, it causes peritonitis.

This ulcer may heal in any of its different stages, in which event new granulations are formed, and the whole is shut by a flat, radiated cicatrix, in consequence of which it sometimes happens that the pylorus becomes constricted, so that the exit of the food into the intestines is impeded. Such a cicatrized induration of the pylorus can generally be detected by palpation in the pit of the stomach as a hard swelling.

In regard to its origin we are quite in the dark. Rokitansky considers as the next cause *hæmorrhagic erosions*. They consist, according to Virchow, in obstructions of arterial vessels, in con-

sequence of which the mucous membrane becomes deprived of its necessary nutriment and dies off, and by the corroding effects of the acids of the stomach is eaten out deeper and deeper. Of special interest is its occurrence after *extensive burns of the skin* and its coincidence with *trichinosis*.

The SYMPTOMS are as follows: *pain*, exactly as in gastralgia, in the pit of the stomach, *often extending to the spine*, coming in spells mostly after eating, ameliorated, sometimes ceasing, after vomiting of slimy, tough or watery, clear, tasteless or sour fluid, often containing blackish or brownish flakes.

Vomiting is found not only during the cardialgic spells, but, also between these spells, although in exceptional cases it is not a prominent symptom. It generally happens soon after eating and frequently without previous nausea, and without great exertion. Acrid, sour, indigestible food causes it most frequently. The vomit often contains particles of decomposed blood in the form of blackish or brownish flakes and masses, and sometimes even clear blood in large quantities. But even this bloody vomit is not a constant symptom; in cases of slow bleeding the blood may pass into the intestines and be carried off in the form of tarry fæces.

Indigestion. In some cases the appetite is little or not at all changed, but in severer cases it is diminished, or altogether absent. Eating usually causes pain and digestion is very slow. Milk and white meat are best digested. Eructations, nausea, pyrosis or waterbrash, are symptoms of the chronic catarrh attending the disease; and obstinate constipation is of frequent occurrence. Sooner or later, the face of the patient assumes a pale, sallow aspect, his spirits become depressed, he loses flesh, and grows weaker and weaker.

When perforation takes place, which may happen either spontaneously or in consequence of a strong concussion of the body, or from overloading the stomach, or during a hard attack of vomiting, we have in a very short time all the symptoms of a *peritonitis*. The patient experiences a stitch-like or cutting pain, altogether different from that of a cardialgic spell; he is seized with a violent chill and vomiting, and his features become collapsed, distorted, pale, expressing deep pain and agony. The abdomen distends largely and is very painful, especially when touched. Respiration is short, superficial, without any respiratory motion of the diaphragm. There is singultus; violent ac-

tion of the heart; frequent, small pulse; fainting; decrease of natural temperature; great prostration and collapse.

Some chronic cases take to the end a *latent* course, until at last discovered as cicatrices on post-mortem examination. This surely proves the curability of this disease. The disposition to it seems to be greater during middle life, and is by no means of rare occurrence.

Differential Diagnosis.—It may be confounded with *chronic catarrh of the stomach.* The round ulcer, however, generally shows a clean, red tongue, has much more frequent vomiting; and the vomit is often tinged with either fresh or decomposed blood, and the soreness in the epigastrium is confined to a circumscribed spot with frequent cardialgic spells.

It may be confounded with *cardialgia.* The round ulcer, however, has a falling away of flesh and change in features, pale, yellowish face, and vomiting between the cardialgic spells, which we do not observe in *gastralgia.*

It may be confounded with *cancer of the stomach;* cancer, however, comes at a later period of life; its pain in the stomach, although often severe, *never extends to the spine;* it tells much quicker upon the general constitution by the wasting away in flesh; it is often marked by a hard swelling in the pit of the stomach, which is observed in cases of round ulcers, only when the pylorus becomes cicatrized; it commences with feverish attacks and ends with a cachectic fever.

THERAPEUTIC HINTS.—Milk and mutton or beef-broth must be considered as the best diet.

Arg. nitr., pain below the xyphoid process in a small place extending to a corresponding point in spine, where pressure aggravates it.

Arsen., vomiting of black, decomposed blood; burning pain; always worse after eating or drinking; gray-yellowish color of the face. Chlorotic patients, with anæmic murmur in the large blood-vessels and scanty menses.

Atropin., pressing pain after eating; and vomiting of acrid, sour masses which set the teeth on edge; hard swelling in the region of the pylorus, just above the navel towards the right, very sensitive to touch; excruciating pain in the stomach; constant vomiting; deadly paleness of the face, with cold perspiration; hands and feet icy cold; pulse very small. Peritonitis in consequence of perforation of the stomach. Compare **Bellad.**

Carb. veg., gray, yellowish face; dry tongue; vomiting of sour, bilious or bloody masses; burning in the stomach; worse after eating; better from drinking cold water; eructations; distortion of stomach and bowels; costiveness.

Conium, Coniin., vomiting of black masses like coffee-grounds in clear, sour water; violent pain in the stomach, always two or three hours after eating, but also at night; somewhat relieved in the knee-elbow-position; swelling in the region of the pylorus.

Ferrum, in anæmic and chlorotic patients, with murmurs in the large blood-vessels and scanty menses. Hæmorrhage from stomach and pain in stomach through to the spine.

Kali bichr., ulcers are oval; they corrode and become deeper without spreading in circumference; pressure and heaviness in the stomach after eating; giddiness, followed by violent vomiting of a white, mucous, acid fluid, with pressure and burning in the stomach; vomiting of sour, undigested food; of bile, with pinkish, glairy fluid; of blood, with cold perspiration on the hands; burning in the stomach; heat of the face; all of which symptoms decidedly suggest its application in the round, perforating ulcer of the stomach.

Lycop., earthy color of the face; rising of sour, acrid fluid; vomiting of sour water and mucus; fulness of stomach and abdomen; pain in the stomach after eating; rumbling and gurgling in the abdomen; constipation; scanty urine; worse from sitting bent; better from rising and walking about; no pain at night, when warm in bed.

Mezer., constant, violent pain and pressure in the stomach after eating, no matter what, even simple things like broth, milk, bread; a constrictive squeezing pain with much belching from one to two hours after eating; the pain reaches its height and ends with vomiting and gulping up what has been eaten; constipation; circumscribed redness of the face; skin cool, pulse very small and frequent; chilliness alternating with flushes of heat.

Nux vom., frequently indicated at first when the patient already has been drugged. Vomiting in the morning before breakfast.

Phosphor., regurgitation of food by the mouthful without nausea; regurgitation of cold drinks as soon as it has become warm in the stomach. Excessive acidity; flatulency; constipation.

Sepia, yellow bridge over the nose; earthy complexion; sour taste in the mouth after eating; vomiting of mucus; pain in the stomach after eating the simplest kind of food; hardness in the

region of the pylorus; constipation; stitching all over the body, with breaking forth of little pustules; menses scanty.

Silic., yellowish complexion; screwing, pressing, twisting pain after drinking; pyrosis and vomiting after eating.

Sulphur, constant pain in stomach and back after suppressed itch; sour taste in the mouth and sour vomiting; constipation; piles; cold legs.

Compare also Gastralgia and Hæmatemesis.

Carcinoma or Scirrhus Ventriculi, Cancer of the Stomach.

According to pathological researches there are three different forms of cancer of the stomach: 1. **Scirrhus** a fibrous growth in which the connective tissue stroma predominates over the crude bodies, generally originates in the submucous cellular tissue; 2. **Carcinoma medullaris**, a marrow-like growth, in which the cancer-cells predominate over the stroma, forms round isolated lumps in the mucous membrane of the stomach, and spreads sponge-like upon the inner surface of the stomach; and 3. **Carcinoma alveolaris**, a jelly-like growth, in which we observe a colloid degeneration of the cancer-cells, invests at first the submucous cellular tissue, but penetrates frequently to the peritoneum, and forms large tumors upon it. All three kinds of cancer may often be seen together; and they mostly invest the pylorus, sometimes the lesser curvature, still rarer the cardia, and most rarely other parts of the stomach.

It is often the case, that the diseased pylorus forms adhesions with adjoining organs, such as the pancreas, liver, kidneys and colon, which are mostly invested by the same morbid product, keeping the stomach in a fixed position. When, however, such adhesions do not take place, the stomach sinks, in consequence of its increased weight, lower down into the abdominal cavity; remaining there, either perfectly free and movable, or adhering to organs lower down such as portions of the intestines, the uterus, or its appendages.

The inner cavity of the stomach is much changed by this disease. It becomes greatly *enlarged* by stricture of the pylorus, much diminished by stricture of the cardia, and cancerous degeneration of the coatings of the stomach. The mucous membrane, in the neighborhood of the cancer, exhibits chronic catarrhal inflammation, which is sometimes spread all over it;

and, in the further progress of the disease, ulceration and arrosion of smaller or larger blood-vessels with consecutive hæmorrhage obtain.

The causes of carcinoma of the stomach we do not know, just as little as the causes of cancer in any other part of the body; heredity seems to deserve some amount of consideration. The disease has been observed most frequently between the years of fifty and seventy.

Symptoms.—1. General *cancer-cachexia:* emaciation; paleness of the skin and the mucous membranes; ash-colored or yellowish color of the face; brittle, dry, harsh and wrinkled skin; peeling off of brany scales, especially from the lower extremities. The expression of the face is sad; the eyes are fallen in; the malar bones stick out; the ankles are œdematous.

2. *Tumor in the pit of the stomach.* This is present, however, only when the cancer invests the pylorus. In this case we observe a roundish, or oval, or irregular lump to the right above the navel under the upper part of the right rectus abdominalis muscle. It is always there, and cannot be moved, if the pylorus should have formed adhesions with neighboring organs; but it changes position and is movable, when those adhesions are not formed. In this latter case it gradually sinks down into the abdominal cavity, and may appear below the navel, or even but little above the symphisis pubis, either as a movable or fixed tumor. But when the pylorus-carcinoma is covered by the left lobe of the liver, or by a distended colon, it cannot be felt. The same is true, when carcinoma has its seat on the cardia or on the lesser curvature. Cancerous degeneration of the arterior wall of the stomach is felt as a resisting mass in the epigastrium, changing position, however, according to the position of the patient; and according to the fulness and emptiness of the stomach, may be felt more towards the right or towards the left side, higher up or lower down, even below the navel.

3. The stricture of the pylorus causes, further, *a sinking in of the abdomen;* the intestines are empty, because the food is prevented from going through the pylorus; the abdominal walls are thin, wrinkled, like parchment; they may be lifted up in folds which remain; the subcutaneous cellular tissue is wasted away, and the full percussion sound is wanting. The spine even may be felt through the abdominal walls, and the aorta descendens pulsates perceptibly. When there is a stricture of the cardia

the *epigastric region is fallen in* because not sufficient nourishment is allowed to enter the stomach; the intestines are likewise empty, only the ribs and the processus xyphoideus protrude.

4. *Vomiting.* This happens if there is a stricture of the pylorus, generally from four to five hours after eating. The masses which are thrown up are digested. In case of stricture of the cardia, the vomiting takes place immediately after or even during eating, without nausea or exertion; it is only a regurgitation of the swallowed food. If diverticles or widenings of the œsophagus exist at the same time, the vomiting follows a little later. The masses which are thrown up are the same as swallowed. If the cancer has its seat on another part of the stomach, the vomiting may be entirely absent; or it may, after having been regular for a time, slacken off and cease altogether. So also, the vomiting may cease if the stricture of the pylorus, by softening, gets removed, or if the walls of the stomach, by diffused cancerous degeneration, lose all power of contraction.

5. *Hæmorrhages from the stomach.* The blood is thrown up either decomposed as a brownish, chocolate-like mass, or when larger blood-vessels have been destroyed, as clear blood.

6. *The pain in the epigastrium*, which has its seat generally in the cancerous tumor, is worse from eating, usually of a lancinating or burning character, and never extending to the spine; it may be absent altogether.

7. The *appetite* is generally diminished; in some cases, however, it is increased; but the patients are afraid to eat, because of the following pain and vomiting.

8. The *stool* is usually retarded; but when the cancerous growth softens and dissolves, we observe colliquative diarrhœa, and when there is hæmorrhage in the stomach, bloody evacuations.

Differential Diagnosis.—At its commencement it can hardly be distinguished from a *chronic catarrh of the stomach;* but in its progress cancer has the following distinguishing features: often a tumor in the epigastrium; now and then coffee-ground looking emesis; rapidly-developing marasmus; ashy or yellowish color of the face; and the age of the individual—over forty years; all of which is not applicable to chronic catarrh of the stomach.

The symptoms of cancer are also very similar to those of the *perforating ulcer of the stomach.* Both have pain; both may have

coffee-ground emesis; both may have hæmorrhages from the stomach, and even a tumor in the epigastrium. But cancer never sets in before the fortieth year of age, lasts on an average not longer than one year, shows a steady progress in general decay, and its pain does not extend through to the spine, but is often combined with swelling of the lymphatic glands, especially in the axillæ and on the neck, and with sleeplessness; while the ulcer befalls persons mostly under forty years of age, may last for several years and be cured, or end quickly by perforation and subsequent peritonitis, and does not so rapidly develop a cachectic appearance of general decay; its pain usually extends from the stomach through to the spine.

Cancer is distinguished from *cardialgia* in that it grows uninterruptedly and gradually, whilst cardialgia comes in spells, with intervals of health; further, by the age of the person, and its inroads upon the general constitution.

How can we know what kind of cancer it is?

A very slow progress of the disease, together with additional ascites, make it probable that it is a jelly-like cancer—*carcinoma alveolaris.* An acute progress and rapid growth of tumor, with frequent and large hæmorrhages, point to *carcinoma medullaris.* A slow progress and considerable hardness and nodulated appearance of the tumor indicates a *scirrhus.* This latter is by far of the most frequent occurrence.

THERAPEUTIC HINTS.—Arsen., burning pain in the stomach; better from warm applications; vomiting of all he takes; vomiting of black substances; prostration; emaciation; restlessness.

Bellad., cutting, clawing pain; nausea, gagging and vomiting; staring eyes; dryness in mouth and throat; fainting.

Bismuth., violent, crampy pains; burning and stinging in the region of the stomach; stomach enlarged, hanging down to the crest of the ilium; hard lump between the navel and the edges of the lower ribs on right side; scirrhus of the pylorus; abdomen bloated in ridges, with great rumbling of wind along the colon, which is rarely passed off, but then gives relief; vomiting, only in intervals of several days, when the stomach has become filled with blood, and then of enormous quantities, and lasting a whole day.

Carb. veg., burning pain, extending from the pit of the stomach into the small of the back; anxiety; cold extremities; cold, sticky sweat; intermitting pulse.

Carb. an., saltish water rises from the stomach and runs out of the mouth, accompanied by retching, and followed by violent, empty eructations, cold feet and hiccough; pressure, clawing, griping and burning in the stomach; scanty, hard stools in lumps; copper-colored eruption on the face.

Conium, vomiting of chocolate-colored masses, sour and acrid; pressing, burning, squeezing pain, extending from the pit of the stomach into the back and shoulder.

Cundur., a case well diagnosticated by Friedreich improved remarkably under the administration of the tincture.

Hydrast., vomits everything, except water with milk; pain in pit of stomach; emaciation.

Kreosot., painful, hard place on the left side of the stomach.

Laches., gnawing pressure, relieved after eating, but coming on again in a few hours, and the more violent the emptier the stomach; great sensitiveness to contact, especially to that of his clothes; drunkards.

Lycop., after eating or drinking, vomiting of dark, greenish masses; bloatedness of the stomach and bowels; rumbling in the bowels; obstinate constipation; hard swelling in the epigastric region.

Mezer., great emaciation; the muscles of the face are tensely drawn, like strings; constant vomiting of chocolate-colored masses, with great burning in the throat; violent retching, accompanied with the agony of death; sleeplessness and exhaustion; obstinate constipation; hard lumps in the epigastric region.

Phosphor., epigastric region sensitive to the touch; constant nausea and fulness in the stomach; after eating, or drinking even a swallow of water, vomiting of a sour, foul-smelling fluid, which looks as though it had been a mixture of water, ink and coffee-grounds; in the sunken abdomen, a circumscribed, hard swelling; pale, earthy complexion; great emaciation; sleepiness; peevishness; fine gurgling noise in the abdomen; urine scanty, red, or brown, with reddish or yellowish-red sediment; bowels constipated, dry, rumbling stools.

Sepia, sour taste after eating; vomiting of mucus, caused by taking even the simplest food; the pain in the stomach increases by vomiting, and extends to the back, with anxiety; oppression of the chest and cold perspiration; hard places in the region of the pylorus; constipation.

In addition, compare the Round Perforating Ulcer, Gastralgia, Catarrh of the Stomach and Hæmatemesis.

Hæmorrhage from the Stomach, Hæmatemesis,

Consists of an effusion of blood, either from the arteries, veins or capillaries of the stomach, and may have two distinct causes, viz.: 1. An *increased pressure in the blood-vessels.* Such is the case, *a. In all congestive, catarrhal and inflammatory affections of the mucous membrane of the stomach.* The bleeding in such cases is not very considerable, and comes from the capillary vessels. *b.* In all those cases in *which the free circulation of the blood is interfered with,* as in diseases of the vena porta, liver or spleen, in consequence of constriction of the inferior vena cava, in heart and lung diseases, all of which cause a mechanical interference to the free circulation, and, in consequence, a stagnation and greater pressure of the blood in the mucous membrane of the stomach. The bleeding in such cases is mostly capillary only; but it may amount to large quantities, if the pressure be great enough to rupture larger blood-vessels. *c.* In cases *where habitual bleedings have been suppressed, menstrual or hæmorrhoidal.* Such bleedings are called *vicarious.*

The *second* distinct cause of hæmorrhage from the stomach *depends upon morbid alterations of the coats of the blood-vessels;* these may arise—*a.* From *chemical* or *mechanical influences,* such as alkaline or corroding substances, or pointed objects within the stomach; from violent vomiting, straining, or from the effects of a fall or a knock; *b. From pathological conditions,* such as varicose veins, and aneurismal arteries; *c. From general diseases,* such as scurvy, yellow fever, and acute exanthematic fevers; *d. From ulcerative processes,* such as the round perforating ulcer, hæmorrhagic erosions and cancer of the stomach.

Post-mortem examinations exhibit the mucous membrane of the stomach pale and anæmic, especially after capillary hæmorrhage. At times we find the mucous membrane infiltrated with blue or darkened patches here and there, from which the blood oozes on slight pressure. On such places the membrane is softened and easily removable, whereby slight depressions are formed, called *hæmorrhagic erosions.* After profuse hæmorrhages we find clots of blood, after slow bleeding or oozing the blood generally is altered by the gastric juice into a substance like coffee-grounds.

Symptoms.—Slight hæmorrhages usually cause no particular signs, except traces of blood in the masses, which are thrown up. Profuse effusions cause a feeling of warmth and fulness in the

stomach, nausea and vomiting, and soon all the signs of depletion, such as paleness, small pulse and cold extremities, great weakness, anxiety and oppression, singing in the ears, flickering before the eyes, dizziness and fainting.

The vomiting brings up the blood clear, in lumps, or already decomposed into a chocolate or coffee-ground-like substance. After the vomiting there is great thirst. Sometimes no blood is thrown up, but it is carried off through the bowels, making the feces appear dark, black or tar-like.

Differential Diagnosis.—It may be confounded with *hæmoptoë*. *Hæmoptoë* is preceded by heart or lung affections, attended by cough. We hear rattling noises in the chest. Hæmatemesis is preceded by affections of the stomach, liver, etc., and is attended by nausea and vomiting.

Hamoptoë generally yields bright, frothy blood; hæmatemesis mostly dark or decomposed blood.

How can we discern whether the blood comes from the stomach or the intestines? In the first case the blood is always mixed thoroughly with the feces; while in the latter case it generally comes without fecal masses.

THERAPEUTIC HINTS.—Acon., in congestion and inflammation of the mucous membrane of the stomach; in scarlet fever, sometimes during desquamation, with excruciating pains in the stomach, gagging, retching, gasping for breath; distressed face; anguish; cold sweat on the forehead.

Arnica, when caused by external injuries; overexertions; soreness all over the body.

Arsen., headache; roaring in the head; fainting; cold, distressed, yellowish or deadly pale, collapsed face; cold perspiration on the forehead; constant nausea; retching; great thirst; burning in the stomach; bloated abdomen; stitching pain in the spleen; black stools; groaning and moaning breathing; quick, trembling, thread-like pulse, 120 to 130 per minute; coldness over the whole body; great weakness; trembling, anxiety.

Bellad., congestion of the head and stomach; singing in the ears; flickering before the eyes; red cheeks; feeling of fulness and warmth in the stomach.

Carb. veg., frequent fainting; hippocratic face; icy coldness of the extremities; intermitting, small, scarcely perceptible pulse.

China, great loss of blood; and in consequence excessive weak-

ness; paleness and coldness of the hands and feet, like marble; sensitiveness to touch in the pit of the stomach.

Colchic., in a case with bloody discharges from the bowels, and deadly nausea from smelling the cooking of food.

Eriger., violent retching and burning in the stomach.

Ferr. ac., pit of the stomach sensitive to touch, and soreness all over the abdomen; pulse full, excited; face pale; greatly exhausted.

Hamam., previous fulness and pain in the abdomen; feverishness by spells; bloody vomiting and stools; weak, cold, profuse sweat; weak and quick pulse; restlessness; fulness and gurgling in the abdomen.

Hyosc., dizziness; stupefaction; eyes red; face bloated; pit of stomach sensitive; dull aching in the region of the liver; abdomen bloated; limbs numb, weak, trembling; during vomiting convulsions, with loud shrieks on account of crampy pains in the stomach.

Ipec., sudden attack; blood dark, black, sour; paleness; coldness; pulse scarcely perceptible; fainting; anxiety; pressure in stomach; great thirst; oppression of breathing; constipation or bloody stools.

Moschus, when the patient becomes pulseless and collapsed.

Nux vom., throbbing pain in the head; pale, distressed face; belching; constant nausea; stomach full and distended, sore to the touch; burning anxiety and pressure in the precordial region; pain in the region of the spleen; constipation, with black stools; urine turbid, dark; fainting; weakness; temperature of the skin *increased;* pulse full, hard, quick.

Phosphor., bright blood; drowsiness; sleepy; face, lips, gums and tongue are pale; thirsty, better from drinking cold water; loathing of food; heaviness and heat at the pit of the stomach, which is distended; abdomen soft; urine dark; skin warm, with partial perspiration; pulse quick, energetic.

Secale, the patient lies still, with great weakness but no pain; face, lips, tongue and hands deadly pale: skin covered with cold sweat; pulse frequent, thread-like; oppression; abdomen soft, without pain.

Veratr., slow pulse; cool temperature of the skin; chilliness; fainting fits; inability to stand; moving or rising causes sickness in the stomach at once; cold sweat; even fainting.

When in connection with suppressed menstrual discharges,

compare Conium, Ipec., Millef., Pulsat., Sulphur; with suppressed hæmorrhoidal discharges, Carb. veg., Millef., Nux vom., Sulphur; after mental emotions, Acon., Hyosc., Natr., mur., Phosph. ac.

When in combination with scurvy, typhus: Alum., Arsen., Carb. veg., Nitr. ac., Phosphor., Phosph. ac., Sulph. ac.

In consequence of destructive processes within the stomach, compare Carcinoma et Ulcus Rotundum Ventriculi.

Gastromalacia, Softening of the Stomach.

Post-mortem examination reveals the coats of the stomach softened; changed into a kind of pappy mass; it can easily be scraped off. The affection is more or less extended and almost exclusively confined to the greater end of the stomach, or *fundus ventriculi*. And, notwithstanding such a complete decay, there is never found any sign of any catarrhal or inflammatory or ulcerative process in the whole mucous membrane of the stomach; neither is the decayed portion sharply defined, but passes gradually over into the healthy tissues. Its symptoms are such as are described under hydrocephaloid, or cholera infantum, the most prominent of which are constant vomiting and diarrhœa. The latest observations on this disease make it more than probable that *gastromalacia* is no disease, but a *chemical process of decay after death*. The reasons for this opinion are the following:

1. Softening of the coats of the stomach have been found in perfectly *healthy individuals*, who died suddenly or were executed after they had a short time previously partaken of food. *Elsässer* observes that the food which had been taken was easily prone to an acid fermentation, or contained already a natural acid, as wine, beer, etc.

2. Experiments which Elsässer made show that substances which easily undergo the process of acid fermentation, such as sugar, milk, starch, etc., bring on this softening in a *healthy stomach*, taken out of a corpse under application of the same degree of heat which the body retains for some time after death.

3. The softening of the stomach is never found in a perfectly *empty* stomach, but always only in the *presence of sour contents*, and it is almost without exception found at the fundus ventriculi, that part of the stomach which lies deepest, if the body lies stretched out on its back, on a part, therefore, on which the fluid contents of the stomach must collect. Furthermore, the size of

the softened tissue has been found to correspond with the surface that has been covered by these contents. Furthermore, Elsässer found that, if he brought the bodies of children who died with cholera infantum into another position, that then other parts of the stomach were softened, and the fundus perfectly free from so-called gastromalacia.

4. The symptoms during lifetime which are ascribed to gastromalacia are so inconsistent and varying, that it would be almost impossible to make a differential diagnosis. Some writers describe it as an acute, others as a chronic disease; some under the form of cholera, others under the form of gastritis; others under the form of irritation, or congestion, or inflammation of the brain. Who is right? And the most constant symptom ascribed to this disease—the constant vomiting—does not very well agree with a softened condition of the stomach as is found after death. For it is almost impossible to realize that a stomach so far decayed could bear such contractions and revolutions without bursting.

5. There is one symptom entirely *absent* during life which we should naturally suppose would necessarily occur, if such softening were really present during life, viz., the *vomiting of blood.* Imagine the entire destruction of so large a piece of membrane, which is full of blood-vessels, without any bleeding! And yet, if this same organ is artificially injected after death, the injected matter escapes from all parts of the softened surface, why should not the blood during life do the same?

6. According to latest observations it appears that in extremely rare cases the softening of the stomach may begin before death, and even proceed to complete perforation. (Lauber.)

I will close by simply suggesting that time and research may reveal the fact, that many other conditions, now considered to be the result of morbid processes in the *living* organism, are but the products of changes which the body undergoes after it has been given over to the sole influence of chemical and mechanical agencies.

b. DISEASES OF THE INTESTINAL CANAL.

Catarrhus Intestinalis, Enteritis Catarrhalis, Intestinal Catarrh.

In its *acute form* this affection presents the same appearance as that by which a catarrhal inflammation of any other mucous membrane is characterized—injection, swelling, infiltration of the submucous tissue; besides there is almost always swelling of the solitary and Pyer's glands, also frequently hyperæmia and enlargement of the mesenteric glands; the serous fluid is mixed with epithelial cells changing gradually into a thick, turbid phlegm, which adheres to the walls of the intestines.

Primarily, it may take place after overloading the stomach, the use of purgative medicines, taking cold, and after mental emotions.

Secondarily, it accompanies tuberculosis, cancer, typhus, puerperal fever, pneumonia, dentition, and wide-spread external inflammations in consequence of burns.

The Symptoms vary according to the locality of the affection. A catarrhal inflammation of the duodenum, is almost always found in connection with catarrhal inflammation of the stomach, and is characterized by obstruction of the ductus choledochus and consequent icterus. A catarrhal inflammation of the *colon* almost always extends to the rectum, and is characterized by colicky pains, also pains in the sphincter ani, tenesmus, and burning at the anus. A catarrhal inflammation confined to the *rectum* alone offers the same symptoms.

In all cases, however, *diarrhœa* is the most permanent symptom, except where the inflammation is confined to the upper portions of the small intestines, when there may be no diarrhœa at all. The color of the discharges is at first usually green, from an admixture of bile which has not been changed by the normal digestive process; later, when the discharges become more abundant, the dejections grow pale and whitish. In case of affections of the lower portion of the colon and of the rectum, the evacuations are slimy and even bloody. The frequency of stools varies according to the severity of the case. The evacuations are usually preceded by sharp, cutting pains in the abdomen, which subside after each evacuation. Severe cases are attended with fever, headache, delirium, want of appetite, sickness of the stomach, and thick coated tongue.

Secondary catarrh of the intestines, according to its seat, presents the same symptoms, but modified by the original affection and sometimes disguised by it. That which ensues in consequence of severe external burns, according to Curling, usually sets in at or about the tenth day after the injury, and is characterized by a sharp pain in the epigastrium and towards the region under the right ribs, and sometimes by a severe diarrhœa.

In most books we find a chapter on "*enteritis*," or *inflammation of the bowels*. The term is too wide. It embraces what we have to diagnosticate specially: as dysentery, ulceration of the bowels, peritonitis; in short, any inflammatory affection of the bowels, and is, therefore, worth about as much as the enchanting term of "*liver complaint*."

THERAPEUTIC HINTS.—**Acon.**, after checked perspiration; frequent, scanty, and loose stools with tenesmus; green stools, like spinage; jaundice.

Aloes, pain and rumbling in the bowels before stool; escape of large quantities of wind with the stool.

Ant. crud., disordered stomach from sour wine or beer; white tongue; watery discharges; thirst at night.

Aranea, colicky pain and diarrhœa daily at the same hour, with a feeling as if the arms and legs were asleep. (Nuñez.)

Arsen., after chilling the stomach by taking cold substances; painful or painless diarrhœa; worse about midnight; sudden prostration and great thirst; also diarrhœa in consequence of severe external burns.

Benz. ac., fetid, white, frothy stools, like soap-suds; urine high-colored and very offensive; child weak and very cross; wants to be nursed all the time. (A. Korndœrfer.)

Bryon., when the weather changes suddenly from cold to warm, or from warm to cold; in the summer season; after eating fruit or sour-krout; after vexation and anger; painful diarrhœa, worse from motion and in the morning.

Calc. carb., during dentition, with vomiting and diarrhœa, which is generally worse in the after part of the day.

Chamom., painful diarrhœa of little children; they draw their limbs up; their belly is bloated, hard; the discharges are watery, or greenish and slimy, or undigested, looking like chopped eggs; there is rumbling in the bowels, and soreness of the anus; jaundice.

China, frothy diarrhœa, generally painless; after sour beer; with a great deal of fermentation in the bowels; worse after eating, and in the night.

Collin., diarrhœa of children, accompanied with colic, cramps, flatulence, etc.

Coloc., with every pain he doubles up, or presses the belly against a hard object.

Corn. circ., dark and bilious stools, with griping and tenesmus; general debility and nervous excitability; chilliness, followed by flushes of heat and sweat.

Crot. tigl., suddenly gushing out of yellowish watery substances, with pain before.

Dulcam., when the weather changes suddenly to cold; cold, chilly feeling in the small of the back; griping in the region of the navel, with nausea in the stomach.

Ferrum, painless, large, watery discharges, with a good appetite.

Ipec., diarrhœa and vomiting during dentition; in consequence of eating sweet, fat, or sour things (raisins, pound-cakes, pastry, salad, etc.); accompanied by pain in the bowels; paleness of the face; cold extremities; even spasms.

Iris vers., burning in the rectum and anus after a passage; painful, green discharges; periodical spells of diarrhœa, always at night about two or three o'clock.

Jatropha, painless diarrhœa, worse in the morning, thin, watery, with loud rumbling, and gushing out of stools.

Leptand., profuse, watery stools, *followed* by severe cutting pains in the small intestines; after exposure to wet, damp weather.

Magn. carb., stools green, like scum on a frog pond; sour, frothy; or with white, floating lumps, like tallow. Colic before, better after stool.

Mercur., great straining, cannot get done; discharges slimy, green or bloody; from taking cold; worse in the evening; jaundice; chaffed at anus.

Nux vom., always after previous use of quack medicines, teas, laudanum, brandy, lavender, peppermint, etc., frequently worse early in the morning.

Podoph., diarrhœa, which changes constantly in appearance, now green, now yellowish, now whitish, slimy, etc.; always worse in the forepart of the day; during teething; rolling the head from side to side.

Pulsat., chilliness; thirstlessness; bitter taste in the mouth;

coated tongue; diarrhœa worse at night; disordered stomach; nausea.

Rheum, during dentition; the whole child smells sour; sour discharges, green, brown, fermented; great pain in bowels and crying; pain worse at once from uncovering an arm or leg.

Rhus tox., great pain in the bowels before evacuation, which is greenish, and contains jelly-like globules or flakes; worse in the night or when keeping quiet.

Rumex, diarrhœa in the morning, with cough from tickling in the throatpit.

Sulphur, either without pain or with straining; always worse in the morning, driving out of bed; excoriating the anus.

Veratr., in summer season with vomiting, coming on suddenly at night, generally painless; white. Great thirst; feels worse after drinking.

Chronic Intestinal Catarrh.

Its pathological features differ much from those of the acute form. The mucous membrane of the intestines appears livid, brownish-red, or gray, slate-colored; it is thickened and swollen; its follicles are hypertrophied, and the whole surface is covered with a tough, grayish, sometimes transparent and jelly-like slime. In some cases all the coats of the intestines are hypertrophied, and polypous excrescences found upon it. Sometimes the mucous membrane appears pale, anæmic, and the submucous cellular tissue infiltrated. It is usually diffused over large tracts of the canal, but may be confined to the lower part of the small intestines or to portions of the colon.

This form develops itself either in consequence of repeated acute attacks, or the frequent use of purgative medicines, or is a concomitant of various other complaints, such as cancer, tuberculosis, typhus, obstructed circulation in the vena porta, cirrhosis of the liver, organic diseases of the heart and lungs, or obstruction in the gut itself. Its SYMPTOMS are the following:

1. *Diarrhœa* or *constipation*, frequently in alternation. The diarrhœic stools consist mostly of thin, fecal matter, of all colors and consistencies, mixed with considerable quantities of slimy, jelly-like matter. The hard evacuations are always covered with tough or jelly-like phlegm.

2. *Copious development of gas* in the bowels, which causes partial

or general distention of the abdomen and great distress to the patient. Its passing off gives great relief, and for that reason the patients make much account of it.

3. *Hypochondriacal mood.* Such patients do not think or speak of anything but their own sufferings; tormenting everybody with the same sorrowful tale.

4. *Gradual emaciation*, and, in severe cases, sinking in of the abdomen, in which the thickened intestines can be felt through the abdominal walls.

As regards its *location*, we may conceive the inflammation as situated: 1. *In the upper part of the small intestines*, if the patient complains of a dull pain in the middle of the abdomen and constipation. 2. *In the lower part of the small intestines*—the *ileum*—if it is attended with greenish-yellow, or yellowish-gray, watery stools, which, when left standing, form a sediment. 3. *In the large intestines*, if the evacuations contain large quantities of slime or pus mixed with blood, and are attended with a great deal of tenesmus.

THERAPEUTIC HINTS.—**Arg. nitr.**, diarrhœa, worse at night; watery, slimy; always after drinking or eating soup, immediate discharge from the bowels, as though the fluid were rolling through without stopping; soreness and burning in the region of the sigmoid flexure; fever; emaciation; desire for sugar.

Arsen., worse about midnight; burning pain in the abdomen; discharges burning, cadaverously-smelling, excoriating the anus; thin, lumpy, of all colors; great thirst; restlessness; exhaustion and emaciation; old look in the face; very cross and despondent.

Baptis., stools dark, offensive, exhausting; pain in liver and region of gall-bladder, sweat and urine extremely fetid; little or no thirst; gone-feeling at pit of stomach; frequent faintings.

Bryon., pain in the bowels after eating or drinking; slightest motion brings on a discharge which looks like dirty water, showing, on standing, a whitish, finely-granulated sediment of undigested food at the bottom of the vessel.

Calc. carb., during dentition; scrofulous individuals; diarrhœa, worse toward evening; whitish, chronic, soft stools; emaciation.

Carb. veg., great collection of wind in the abdomen; frequent discharges of very fetid flatus without relief; stool, even if soft, is passed with great difficulty, similar to Cinchona.

Coccul., diarrhœa only through the day, thin, yellowish, without pain; great rumbling in the bowels; hectic fever; general emaciation.

Coloc., chronic diarrhœa in the morning; watery; with pain in the sides of the abdomen.

Crot. tigl., diarrhœa, with nausea; watery discharges gushing out forcibly; worse after drinking, and in the summer season.

Gelsem., when diarrhœa is always brought on by exciting news, fright or emotions of the mind.

Graphit., a quantity of white mucus is expelled with the stool, or the hard feces are covered with slime.

Gummi gutt., pain in ileo-cæcal region, which is sensitive to the touch; discharges watery, slimy, undigested, without smell; during stool, bearing down and colicky pain, prolapsus ani, and cold sweat on the limbs. Also thin, yellow, fecal or watery, frequent, copious stools, coming out all at once; worse in the forenoon; sudden urging; after stool great relief in abdomen.

Hepar, especially after the abuse of mercury, with longing for sour or strong-tasting things; empty, sinking feeling in stomach, relieved by eating.

Ipec., cured a chronic diarrhœa with clean tongue and frequent nausea, constant pain at umbilicus; miasmatic origin. Aided by milk-diet. (W. L. Dodge.)

Laches., ileo-cæcal region very sensitive to touch; after great straining, discharge of a mass of croupous exudation; stools very offensive; heat of abdomen.

Mercur., discharge mostly slimy and with straining; worse towards evening and in the night; gums swollen; teeth loose; sickly smell from the mouth; the mere putting the hands upon something cold, causes pain in the bowels; debility; sweat without relief.

Natr. mur., diarrhœa mostly through the day; greenish, bloody; or watery; perceptible falling away in flesh on the neck; the neck becomes quite thin. (Hering.)

Nitr. ac., acute pain in the abdomen during stool; worse in the morning; discharge brown and slimy.

Nuphar lut., stool liquid, light yellow; the call is urgent, must go quick, every morning at six o'clock, and followed by two or four more passages in a few hours, and no more until next morning. (J. L. Gage.)

Œnoth. bien., relieves the melancholy and low spirits which accompany the chronic form. (J. S. Douglass.)

Petrol., slimy discharge; also, brown fluid or pappy evacuations; pain in the bowels; before dusk a sensation of unpleasant motion and grasping in the bowels; disgust for meat, especially fat; bitter-sour taste in the mouth; cold feeling in the abdomen. Diarrhœa, sometimes only during the day.

Phosphor., painless, watery discharges; especially in the morning after getting up; in debilitated, consumptive patients; lying-in women, etc.; burning of the palms of the hands; great weakness; emaciation. Worse in warm weather.

Phosph. ac., painless, watery discharges, with great rumbling in the bowels; during cholera epidemics.

Sepia, jelly-like stools, with colic; debilitating diarrhœa; worse after milk; the whole aspect of the patient indicates a deep-seated disturbance in the digestive functions.

Sulphur, diarrhœa; worse in the night or early in the morning; stools yellow or brownish or greenish, mixed with blood, slime or pus; feces pass off while the patient intends to relieve himself of flatus; the abdomen is sore to the touch; during stool, pain in the small of the back; palpitation of the heart; congestion of the head; prolapsus ani; itching, burning, smarting in the anus and rectum.

Frequent alternation of costiveness with diarrhœa suggests: Ant. crud., **Arg. nitr.**, Arsen., Bryon., Graphit., Natr. mur., Phosphor., Rhus tox., Ruta, Sepia.

Copious development of gas: Carb. veg., Coccul., Graphit., Nitr. ac., Phosphor., Pulsat.

The patients think and talk of nothing but their ailments: Arsen., Calc. carb., Coccul., Mercur., Nitr. ac., Phosphor., Sepia, Sulphur.

Emaciation and sinking in of the abdomen: Arsen., Borax, Calc. carb., China, Ferrum, Graphit., Iodium, Laches., Lycop., Natr. mur., Nitr. ac., Nux vom., Phosphor., Phosph. ac., Pulsat., Silic., Staphis., Sulphur, Verat.

Typhlitis, Perityphlitis and Inflammation of the Vermiform Process.

Although, anatomically speaking, these are three distinct forms of diseases, yet, considering them in a diagnostic point of view, their symptoms during life are so intimately interwoven, that a differential diagnosis among them is rarely possible.

Typhlitis is an inflammation or catarrh of the mucous membrane of the cæcum, in consequence either of cold or accumulation of hardened feces or foreign bodies, such as cherry-stones, plum-stones and the like. It may spread over a considerable portion of the colon ascendens, and to the vermiform process; it may spread to the muscular layer of the gut, cause ulceration and even perforation of these parts, and terminate in peritonitis, inflammation of the loose areolar tissue around the cæcum, and formation of abscesses in the right iliac fossa.

Perityphlitis is an inflammation of the loose areolar tissue around the cæcum, either in consequence of typhlitis, or starting here independently; it is attended with a feeling of numbness and formication in the right limb and but little meteorism. It terminates, if not checked, in the formation of abscesses in the right iliac fossa, which either discharge into the neighboring viscera or break through the abdominal parietes, mostly in the neighborhood of Poupart's ligament. As such abscesses, if not originally caused by perforation of the cæcum from within, mostly perforate the posterior wall of this organ, it occasionally happens that the abscess, when it discharges exteriorly, contains fecal matter also.

Inflammation of the appendix vermiformis may be caused, like typhlitis, by hardened fecal matter or foreign bodies. It terminates either in obliteration of this process, or, when its opening gets closed, in an accumulation of a slimy, serous fluid, by which its walls become distended, forming the so-called dropsy of the appendix, or in the formation of abscesses in the right iliac fossa, or, lastly, in more or less extended peritonitis.

The SYMPTOMS of these three pathological states we may sum up under the following heads:

1. *External swelling.* It makes its appearance in the right ileo-cæcal or ileo-inguinal region of the abdomen. It is felt directly under the abdominal wall, which is movable upon it, except in such cases where a perforation to the outside is going to take place, and exhibits in most cases considerable heat and redness. The swelling itself is immovable, its surface feels smooth, and its consistency varies in degree; it may reach sometimes the hardness of a stone; fluctuation is seldom perceptible. Its growth is rapid; in a few days it reaches its height. This swelling is wanting only in such cases in which perforation takes place, before yet exudation and pus formation could take place around the

cæcum, and it is not perceptible or at least not distinctly so, when, in consequence of peritonitis, the fluid exudation or meteorismus of the neighboring intestines covers it over. When perityphlitis follows upon typhlitis and the latter subsides, we find the exterior swelling likewise decreasing while a tumor deeper in still remains.

2. *Pain.* It usually commences suddenly, is of a sharp, lancinating or boring nature, and increases on motion, especially such which put either the abdominal or the psoas muscle on a stretch. It is worse from touch, and confined either to the right iliac fossa alone or extending over a larger surface in accordance to the extension of the inflammation.

3. *Obstinate constipation,* which may last for days, although interrupted sometimes.

4. *By an intercurrent diarrhœa of a slimy, watery substance.* Such diarrhœa, however, is no favorable sign; only fecal discharges afford relief.

5. *Vomiting* may take place at any stage of the disease, but does so most frequently at its height. In some cases it is very violent, 10 to 12 times a day, is at first of a watery, yellowish or greenish fluid, which, however, as the disease progresses, and the constipation continues, assumes a stercoraceous smell, until, by the continued antiperistaltic motion of the intestines, the contents of the smaller intestines are forced back into the stomach, whence they are thrown up, affording temporary relief to the patient.

6. *Belching and meteoristic distention of the stomach and upper part of the abdomen.*

7. *Singultus* or *hiccough* is a frequent sign, and very distressing to the patient, preventing all rest and sleep.

8. *Pain in the genitals, erections of the penis, drawing up of the testicles, difficulty in urinating, numbness of the right leg,* are consequences of the swelling, pressing upon the corresponding nerves; while

9. *The œdematous swelling of the right* leg is the consequence of its pressure upon the crural and iliacal veins. Such a desperate condition of things must necessarily involve the whole system

10. *In fever,* which is more or less violent according to the extent of the inflammation.

Differential Diagnosis.—It may be confounded with

1. *Abscesses of the psoas muscle.* But in this affection the swelling lies deeper, nearer Poupart's ligament, and more towards the middle line of the abdomen. It makes any motion with the right

leg, which is always held in a bent position, impossible; it leaves the action of the bowels undisturbed; it is associated with caries of the vertebræ or bones of the pelvis. Pus, when discharged through the abdominal walls, has no fecal odor.

2. *Tumors or abscesses of the right kidney* cause the main part of the swelling to appear in the loin, or above the anterior termination of the crest of the ilium. There is no disturbance in the action of the bowels, but the urine contains pus, bloody gravel, pointing at once to a diseased state of the kidneys.

3. *Tumors of the right ovary* are attended with menstrual disturbance, but not with affections of the bowels; they grow slowly, and from below up out of the pelvis, where they may be discovered by a per vaginam examination.

4. *Cancer of the cæcum* is a very rare disease, of very slow growth, and attended with all the general signs of cancerous diathesis.

5. *Intussusception or invagination of the intestine* may be sometimes very difficult to be discerned from typhlitis, especially if it should happen to cause a swelling just in the right iliac region; but this is not always the case; and, furthermore, it is preceded by diarrhœa. As soon, however, as invagination has taken place, there are only bloody, slimy discharges; the obstruction of the intestinal canal with all its symptoms—stercoraceous vomiting, hiccough, etc.—is at once established, while in typhlitis it sets in only during the further progress of the disease.

THERAPEUTIC HINTS.—**Bellad.**, great pain in the ileo-cæcal region, cannot bear the slightest touch, not even the bed-cover; nausea; vomiting; necessity of lying motionless on his back; high fever, increasing during the afternoon with red or pale face; slight perspiration during the fever.

Ginseng, stinging pain and swelling and gurgling noise in the ileo-cæcal region; dry tongue; heat and delirium when going to sleep.

Hepar, after the abuse of mercury; ileo-cæcal region swollen, deep, in a circumscribed lump; lying on the back with the right knee drawn up, as easiest position; frequent urging to stool and urination.

Laches., great sensitiveness to contact of the abdomen; swelling in the ileo-cæcal region; painful stiffness from the loins down to the os sacrum and thighs; constipation; scanty urine, with red sediment; strangury; only possible position is that on the back,

with the knees drawn up. Fever increases towards 3 o'clock, P.M.; patient feels worse after sleep.

Mercur., painful, hard, hot, and red swelling in the ileo-cæcal region, painful to the touch; face red or pale, sickly; thirst; red, dry tongue; constipation, or frequent slimy discharges with straining; sweat without relief.

Plumbum, large, hard swelling in the ileo-cæcal region, painful to the touch and least motion; or when sneezing and coughing; the whole abdomen sensitive; the navel drawn in; frequent sour belching; nausea; retching; constipation; anxious countenance; dry tongue, red on the edges, brown coating in the middle; great thirst, lame feeling in the legs.

Rhus tox., hard, painful swelling of nearly the entire right side of the abdomen; pain worse in sitting or when stretching the right leg; impossibility of lying on the left side; better when lying on the back with right leg drawn up; and when gently pressing the swelling from below upwards; pale, anxious face; burning of the palms of the hands; profuse sweat at night; small, frequent pulse; after taking cold by getting wet.

Thuja, only those parts of the body perspire which are uncovered, those covered are hot and dry.

Besides these compare Arsen., Chamom., Coccul., Colchic., Coloc., Lycop., Nitr. ac., Ammon., Platin., Silic., Sulphur, Veratr., Zincum.

Stercoraceous smell of the vomit hints to Opium, Mercur., Plumbum.

Already formed abscess in the right iliac fossa indicates Hepar, Mercur., Silic., Iodium., Laches., Kali carb., Lycop.

Proctitis, Catarrhal Inflammation of the Rectum.

This is either of an *acute* or a *chronic* nature, and its pathological appearance corresponds entirely to catarrhal inflammation of any other mucous membrane, exhibiting injection, infiltration, mucous secretion, and at last, thickening of the membrane, chronic blennorrhœa and ulceration. It may be caused by taking cold, purgative medicines, medicated injections, insertion of pieces of soap to promote evacuations; by worms and hard fecal matter.

It may, *secondarily*, be a mere continuation of an inflammatory process in neighboring organs, such as the hæmorrhoidal veins,

the bladder, the prostatic gland, or the internal sexual organs; or it may accompany tuberculous, cancerous or syphilitic ulcers, or disorders which cause stagnation in the abdominal veins in general, such as diseases of the liver, of the vena porta, the heart and lungs.

Its SYMPTOMS are: *pain*, tearing, throbbing, burning, or as if something were sticking in the rectum which had to be forced out; worse during an evacuation; constant desire to evacuate; tenesmus; in severe cases, attended with retention of urine and strangury; painful urination or drippling of urine; erection of penis; drawing up of testicles; leucorrhœa.

The bowels are mostly constipated, but the stools natural, covered, however, with a thin layer of slime, which is colorless or tinged with blood. The great straining frequently causes prolapsus ani. In its *chronic* form the pain is more of a dull, heavy nature, and its most prominent symptom is the constant discharge of a thick, yellowish, even purulent secretion from the mucous membrane of the rectum. It covers either the natural discharges from the bowels, or it is mixed with the loose stools, (if there be such) or oozes out of the anus, staining the linen of the patient. This chronic form is frequently attended with chronic catarrh of the bladder, the uterus and vagina, and especially with *hæmorrhoidal* affections. In both forms the inflammation may extend to the cellular tissue about the rectum.

THERAPEUTIC HINTS.—In ordinary acute cases there will be indicated either Acon., Bellad., Nux vom. or Sulphur.

When there is tenesmus in the rectum and bladder at the same time: Alum., **Aloes, Capsic., Hyosc., Lycop.**, Natr. carb., Merc. subl.

During stool, discharge of urine impossible: China, Merc. subl.; during stool, erections of penis: Thuja, Ignat.; during stool, discharge of leucorrhœa: Thuja, Zincum, Magn. mur.

Drippling of urine: Arg. nitr., Bryon., Calc. carb., Laches., Lycop., Natr. carb., Petrol., Rhod., Staphis., Silic., Thuja.

Slimy, purulent matter oozing out of the anus: Borax, Coloc., Sepia, Thuja.

Prolapsus ani: Nux vom., Sulphur, Podoph., Calc. carb., Lycop., Bellad., Ignat.

Polypi recti: Calc. carb., Calc. phosph., Phosphor., Silic., Thuja.

Periproctitis

Corresponds to Perityphlitis, being an inflammation of the areolar tissue around the rectum.

Primarily it is of rare occurrence, but may be brought about by falls, bruises, riding on horseback, surgical operations, or taking cold.

Secondarily it is much more frequent, and may be a mere continuation of inflammatory and ulcerative processes in the rectum or other neighboring organs, the pelvic bones, the prostate gland, the bladder, the uterus; sometimes, however, it appears as part of a general tubercular process and puerperal inflammation, without any ulcers in the rectum.

Its most important SYMPTOMS are:

1. *A swelling and hardness around and about the rectum*, which appears either back of the anus in the coccygeal space, or in front of it, in the perineal region. Sometimes, however, nothing is seen or felt exteriorly, the swelling being higher up; and an examination per anum, by which it might be detected, is so painful to the patient that it is seldom practicable.

2. In the course of ten or twelve days, however, the hard swelling is converted into an **Abscess**, which breaks either outside, in the above-named regions, or perforates the rectum, and discharges through the anus. In rare cases only, does a perforation take place into the bladder, the vagina, the uterus, or into any other part of the intestines. The first is the most favorable. After discharging itself fully, it heals and nothing is left. Perforation of the rectum, however, frequently causes **Fistula**; and perforations into any of the other organs are still more serious in their nature. Instead of terminating in abscess, however, the exudation is occasionally absorbed, leaving a chronic induration of portions of the wall of the rectum.

3. The *pain* is mostly of a dull, heavy kind, or darting in the region of the rectum; worse in sitting and walking. Sometimes it is throbbing; shaking chills are a sure sign that formation of pus has taken place. Tenesmus is also frequently combined with it; also difficulty of voiding urine.

THERAPEUTIC HINTS.—When caused by *traumatic causes:*—bruises, falls, riding on horseback: Arnica, Conium, Pulsat., Rhus tox., Sulph. ac.

For heavy, dull, pressing pain: Bellad., Ignat., Nux vom.

For darting, stitch-like pain: Bryon., Kali carb., Phosphor.

When the swelling is hard and inflamed: Arsen., Bellad., Hepar, Laches., Mercur., Pulsat.

To bring it to a head: Arsen., Calc. carb., Hepar, Kreosot., Laches., Lycop., Mercur., Sepia, Silic.

Fistules require: Caustic., Berber., Silic., Calc. sulph.

Dysentery.

The pathological character of this affection presents the following features: it is seated almost exclusively in the large intestines, from the valve of the cæcum down to the rectum; occasionally, however, it passes beyond the cæcal valve towards the ilium, but is here only seen in its mildest form. When commencing, the mucous membrane appears reddened, swollen; the epithelium peels off; sometimes it is raised into little vesicles by an exudation beneath. Later the mucous membrane becomes covered in patches with a dirty-whitish, yellowish-gray, or yellowish-red substance, which, from the contents of the bowels or from blood, may assume a greenish or brownish color, and consists of decayed epithelial cells, slime, pus and blood globules. If scraped off by the knife, it discloses the mucous membrane beneath reddened, softened, and uneven in consequence of a serous infiltration into the submucous cellular tissue. The solitary follicles are swelled and in a state of ulceration. All this causes a collection of putrid, bloody or purulent masses within the cavity of the gut. In a still higher degree of inflammation the mucous membrane is found decayed or changed into a soft, dark mass, which is thrown off and discharged, giving rise to irregular, larger and smaller dysenteric ulcers of the colon which in rare cases may cause even perforation of the gut. Besides these grave destructive changes within the intestine itself, we also find more or less inflammation of the peritoneum, swelling of the mesenteric glands, hyperæmia and inflammation of the liver.

Dysentery generally prevails *epidemically*, under the influence of a tropical climate, or one resembling a tropical climate, on a soil of moist and perhaps swampy character, where by miasmatic and atmospheric conditions a disposition to it is produced. It is found in camps, in hospitals, in regions where malaria prevails. Summer heat and in autumn, sudden cool nights are very apt to

cause it. *Sporadic* cases we find, therefore, occur mostly after sudden check of perspiration, or after getting wet; fruit, if ripe, will scarcely ever cause it, although some people do assert it. Unripe fruit, however, is always hurtful. Virchow considers the *epidemic* form of a *diphtheritic*—the *sporadic* of a catarrhal—nature.

Dysentery attacks all ages and both sexes. In its epidemic form it is believed by some authors to be contagious, especially when large masses of excreta become heaped together, as in camps or hospitals, wherefore every dejection should be considered as dangerous. Those who deny its contagiousness do it only reservedly. Sporadic cases are generally considered as non-contagious.

Symptoms.—1. *The stools*, commencing almost always as diarrhœic, change into characteristic dysenteric stools. At first we observe in the liquid diarrhœic stools jelly-like, transparent clots of slime, looking similar to boiled sago; they are dotted and streaked with blood and will sink to the bottom of the vessel if the evacuation remains standing a while. They soon increase and are discharged in larger quantities of jelly-like, transparent masses tinged with blood. As they augment, the fecal substance of the stool diminishes, until, finally, nothing but slime is discharged. By this time, however, its jelly-like character changes into an opaque, dirty-whitish, or reddish-gray appearance, like scrapings, swimming sometimes in a thin, bloody, watery fluid; fecal matter disappears entirely.

The blood contained in it varies in quantity from merely tinging the slime into a reddish color to clear blood. In rare cases only whole shreds or pieces of slough from the lining membrane pass away; but when the discharges assume a brownish, chocolate-like color, and are of a penetrating, cadaverous smell, the dysentertic ulcers within have become ichorous and the mucous membrane is decaying. When, however, fecal matter again makes its appearance, which generally takes place in the shape of hard lumps, it has always been to me a sign that the inflammation is gradually subsiding; and, although after it many more evacuations of mere bloody slime may take place, yet the violence of the disease seems broken; there is, after that, less and less slime discharged, until, at length, normal alvine discharges prove the restoration to health.

The frequency of stools varies from four to twenty, thirty or even more in the course of twenty-four hours. The smell of the

evacuations varies also. At first, as long as fecal matter is contained therein, the smell is, accordingly, stercoraceous; later, when the fecal matter has disappeared, there is either no smell, or a peculiar, fleshy, sweatish, nauseating odor. When, however, the disease is at its height, and the dysenteric ulcers become ichorous and sloughing, the smell is awful, penetrating, cadaverous.

2. *Pain in the bowels and tenesmus.* Characteristic of dysentery is the *colicky, cutting and drawing-together pain* in the bowels *before* and during an evacuation, ceasing soon after, to be renewed by another attack, thus coming in spells. The evacuations are generally attended by great burning pain in the anus and rectum. In fatal cases, where paralysis of the colon takes place, the pain ceases altogether. Likewise characteristic is the *tenesmus* or *straining* during an evacuation, and continuing some time after although not more than a teaspoonful be voided. It is the most painful symptom of the disease, and may cause fainting, convulsions and prolapsus ani. This symptom also ceases if, in fatal cases, paralysis of the colon takes place.

3. *Reflex symptoms.* To these belong the *vomiting* frequently found at the beginning, but also during the progress of the disease; singultus (which, however, is not so frequent, and then is generally a sign of peritonitis), *retention of urine and painful micturition.*

4. *General symptoms* are, *more or less fever*, but the temperature of the skin is usually not as high as in most other inflammatory diseases. The skin is mostly dry. There is great thirst, little appetite, great loss of flesh.

5. *Secondary* symptoms are, peritonitis, perityphlitis, periproctitis, pneumonia, pleuritis, parotitis, splenitis, hepatitis, erysipelas, hæmorrhages, decubitus.

6. *Unfavorable symptoms* are, copious hæmorrhages, ichorous, chocolate-colored and cadaverous-smelling discharges, great prostration of strength; great frequency and smallness of pulse; cold skin; cold, sticky perspiration; livid and cyanotic face; collapsed abdomen, with want of elasticity of its walls; paralysis of the sphincter ani, so that the anus remains open; involuntary discharges; peritonitis; perforation of the colon; shaking chills; erysipelas; violent vomiting, with cholera-like symptoms; obstinate singultus; delirium; convulsions and paralysis.

THERAPEUTIC HINTS.—**Acon.**, after sudden check of perspira-

tion; chill, high fever and dry skin; first very frequent, small, brown, painful, and at last bloody discharges.

Aloes, violent tenesmus; frequent stools of bloody water or with lumps of mucus, like jelly; during stool fainting or screaming on account of violent pains in the abdomen, especially right side, ceasing after stool; hunger; great rumbling along the colon; large quantities of flatus escape with the stools; pains in the small of the back; when urinating, urging to stool.

Alum., tenesmus of bowels and bladder; no flow of urine except during an evacuation from the bowels.

Apis, great tenesmus, and feeling as if the intestines were bruised.

Arsen., discharges have a fetid, foul smell; consist of fluid feces mixed with blood, chocolate-colored; most frequent about midnight; *before stool*, torturing sensation, as if the abdomen were being constricted; *at the stool*, a feeling of contraction in the rectum; *after stool*, burning in rectum and anus; trembling in all the limbs; palpitation of the heart and distention of the abdomen; tenesmus with burning in the anus and rectum; great exhaustion, and, lastly, some short relief from pain; great thirst, but drinking little at a time; tongue white or brown or bluish; nausea; vomiting; face sunken, expressing great anguish; great restlessness; petechial, miliary and nettle-rash eruptions; cold, dry skin, or else cold perspiration; very frequent, weak pulse; fetid urine.

Baptis., violent, colic-like pains *before* every stool and great tenesmus; discharges of pure blood, with very little mucus; dry, brown tongue; typhoid tendency.

Bellad., discharges greenish, slimy, bloody, with great tenesmus; bearing down and shuddering; afterwards burning in the anus and rectum; the mucous membrane of the anus appears swollen and is pressed out; urine suppressed; abdomen very sore to pressure; cutting, tearing and constricting pains in the abdomen, so violent that the patient screams out; thirst, belching, vomiting; starting in sleep; delirium.

Bryon., during summer-heat; pain and discharges are brought on from motion, even from turning in bed, raising the arms or bending the toes.

Canthar., tremendous burning pain through the whole intestinal tract, from the bowels down to the anus, with painful sensitiveness of the abdomen to the slightest touch; unquenchable thirst, with

disgust for all kinds of drink; loss of epithelium on the lips, tongue and palate; vesicles and cankers in mouth and throat collapse, small pulse, coldness of hands and feet. Stools bloody and watery, with scrapings from the bowels; frequent urging to urinate, with burning after urination.

Capsic., abdomen distended, as though it would burst; very frequent discharges, streaked with black blood, with violent tenesmus and burning both in the rectum and bladder; thirst after stool, and shuddering after drinking; taste like putrid water; pains aggravated by currents of air, though warm.

Carb. veg., after Arsen., if there be cold breath, cool skin, terribly smelling discharges, general collapse.

China, discharges chocolate-colored, of a terrible, cadaverous smell, worse at night; great general exhaustion.

Colchic., discharges of white, jelly-like or bloody mucus; spasm of the sphincter ani during a discharge, with a shuddering over the back; such spasms occur also without a discharge; œdema of the lower extremities, which are cold; ascites; urine dark brown and scanty.

Coloc., discharges slimy, bloody, like scrapings; abdomen bloated; violent pain in the abdomen, as though the intestines were squeezed between stones, which compels the patient to bend double; from the abdomen rises a shuddering over the body; during stool, sometimes tenesmus, at other times not; after stool relief of the pain. After vexation or indignation.

Diosc., stools deep yellow, thin, watery; dark green and mucous; severe twisting colic with intervals of relief; faint feeling in the abdomen after stool.

Eriger., stools small, streaked with blood, accompanied with tormina; burning in the bowels and rectum; hard lumps of feces mixed with the discharges; urination painful or suppressed.

Gummi gutti, stools watery, frequent, copious and offensive, coming out all at once affording great relief.

Hamam., when the amount of blood is unusual in quantity and amounts to an actual hæmorrhage, generally of dark blood; or when there are clots or patches of blood scattered through the mucus. Soreness of the abdomen.

Ipec., when caused by eating unripe, sour fruit; great disgust and loathing of any sort of food; sickness and vomiting of grass-green, jelly-like mucus; coated tongue; headache; chilliness; great pressing to stool; voiding slimy, bloody, offensive discharges, with subsequent tenesmus; worse in the evening.

Kali bichr., discharges brownish, frothy water, bloody, with gnawing pain about the umbilicus; violent painful pressing, straining and tenesmus; tongue smooth, red and cracked. After Canthar.

Laches., discharges chocolate-colored, of a cadaverous smell; during evacuation burning in the anus; cramp-like pain in abdomen; coldness; thirst; abdomen very hot; tongue red and cracked at its point, or black and bloody.

Magn. carb., stools green, watery, frothy, with green scum like that of a frog pond; bloody mucus. In hot weather; during the day; during dentition. Abdominal pain before and during stool; tenesmus.

Mercur., discharges excoriating; *before stool:* cutting, pinching, and twisting pains in the abdomen; anxiety and trembling; *during stool:* burning in the anus; eructation, nausea; faintness, colic, heat and perspiration; *after stool:* great tenesmus; cannot get done; prolapsus ani and trembling; the abdomen generally feels cold; bad taste in the mouth; saltish saliva; rheumatic pains in the limbs; all worse at night.

Merc. subl., with almost constant cutting pains in the abdomen, and intolerable, painful, almost ineffectual, pressing, straining and tenesmus; frequent, scanty discharges of bloody slime, day and night, with *great tenesmus of the bladder.*

Natr. carb., straining and tenesmus, with a voluptuous sensation in the genitals.

Nitr. ac., profuse discharges of blood; *before stool:* colic; *during stool:* spasmodic contraction of the anus; cutting and straining in the anus and rectum; *after stool:* burning in the anus; ineffectual straining; colic; exhaustion; anxiety and general uneasiness. Pulse intermits every third beat.

Nux vom., always after previous abuse of diarrhœa mixtures; pain in the abdomen before and during a discharge, with tenesmus, relieved *after stool;* pressing pain in the back, as if broken, before and during stool; sickness in the stomach.

Plumbum, in violent cases with bloody masses of exudation; burning in anus during discharge and long-lasting tenesmus afterwards.

Pulsat., discharges white-slimy; whitish-coated tongue; pappy, sticky taste in the mouth, without thirst; great difficulty in breathing; all worse at night.

Rhus tox., discharges jelly-like; pains in the abdomen and

limbs, worse when lying still, better from moving about; nocturnal exacerbation; after getting wet.

Staphis., cutting pain before and after stool; tenesmus in rectum and bladder during stool; always worse after drinking cold water. After indignation.

Sulphur, when other remedies have failed; when, during stool, burning, cutting, pressing and prolapsus recti, cutting in urethra, catching of breath, palpitation, chills about the lower part of the body; and afterwards, straining and throbbing in the rectum, bruised pains and pinching in the abdomen, chills and lassitude. Worse early in the morning, driving out of bed; faintish feeling in pit of stomach about 10 or 11 A.M., etc.

Thrombid., tenesmus, prolapsus ani; discharge of mucus, pus, blood and occasional fecal matter. Skin dry, tongue coated, thirst moderate.

Schüssler: **Kali mur.**, in most cases; if not **Calc. sulph.**, especially if the discharges consist of pus-like slime. If the tongue gets dry, with a delirious state and distention of abdomen and the discharges have a putrid stench: **Kali phosph.** The same if much pure blood passes off. If it begins with violent fever first: **Ferr. phosph.** In case of spasmodic bellyache, relieved from pressure and doubling up: **Magn. phosph.** If the pain is depending on inflammation, making no intervals, and increased by pressure: **Ferr. phosph.**

Cholera.

A case of true cholera exhibits the following symptoms: Being preceded in most cases by profuse diarrhœic stools the bowels are quickly emptied of their contents. The discharges change to a rice-water like fluid, and are accompanied with profound prostration. Upon drinking follows vomiting, at first of the contents of the stomach and afterwards of mere watery substances, slightly tinged yellow. The weakness of the patient increases rapidly and his voice becomes husky. The discharges now take place involuntarily, the secretion of urine ceases. To the insatiable thirst associate great anguish and oppression of the chest and in the pit of the stomach, and the most painful cramps in the calves of the legs and in the bowels. The aspect of the patient has by this time changed fearfully. The eyes have sunk into their orbits, the nose has become pointed and the cheeks fallen in. The skin

on the fingers is wrinkled, like that of a washerwoman—and if a portion of the skin is pinched, it remains as a fold. The lips, extremities, genitals, assume a bluish, cyanotic color. The pulse is so faint, that it scarcely can be felt and so is the impulse of the heart. The whole surface of the body becomes icy cold.

There is no headache, but frequently the patient complains of darkness before the eyes, roaring in the ears and vertigo.

All this may take place in a few hours and the patient be no more.

The pathological changes, so far as they belong to the small intestines, are as follows: The serous (peritoneal) covering of the small intestines is, in consequence of capillary hyperæmia, of a rosy color and dry, or covered with a layer of sticky fluid; its mucous membrane is injected, and the solitary as well as Peyer's glands are swollen, and filled with serum or solid exudation. The villi—those minute projecting papillæ which are so abundant as to give to the entire surface a beautiful velvety appearance—have lost their epithelium, and the surface of the mucous membrane appears smooth, or covered with extensive extravasations. The colon presents at some epidemics diphtheritic or dysenteric signs of inflammation; at others no signs whatever. All other changes found post-mortem have not yielded any characteristic signs of cholera; they must be considered merely as accidental lesions, from which to make deductions would be, according to Buhl, a wrong to science.

Niemeyer explains the whole row of fearful changes, which the entire system undergoes by this dreadful malady, in the following manner:

Out of the villi, which are denuded of their natural protection, takes place a constant copious transudation of serum into the gut, therefore the *rice-water discharges* upward and downward, by which cholera is characterized; but being deprived of their epithelium, these villi lose their capability of absorbing the fluid which the patient takes as drink; consequently the patient constantly *loses* fluids, but *gains none.* The next natural consequence of this must be, *that the blood becomes dark and thick,* in later stages even *black, tarry, ropy, semi-coagulated.* Thus the blood, deprived of its natural amount of water, seeks for fresh fluid supply, and absorbs all the water contained everywhere in the tissues, in consequence of which all the tissues become dry and reduced in volume; *the nose becomes pointed, the cheeks fall in, the eyeballs sink*

back into their orbits, the skin *wrinkles* on the fingers like washer-women's, and remains as a fold, wherever pinched, and even *pathological exudations*, which had resisted all medication—for example, serous exudations of the pleural cavities, or within the synovial membranes of the joints—are completely absorbed, and moist eruptions and ulcers become dry like parchment. And further, it explains the cessation of all natural secretions, such as saliva, tears, sweat, urine and bile, simply because there is nothing more contained in the blood to be secreted.

Another consequence of the blood constantly losing its watery constituents is this: the circulation of the capillaries becomes impaired, if not entirely prevented. As soon, however, as this takes place in the capillaries of the heart-muscle, it causes, according to physiological and pathological experience, a paresis of the heart, and *thus that characteristic feebleness and faintness of the heart's impulses and sounds*, and the small, feeble, faint pulse of the radial and carotid arteries, in cholera; thus, also, the *cyanotic symptoms*, the *blueness of the skin everywhere*, the *blue tongue*, by which severe cases of cholera are characterized.

On the same condition of the blood, also, depends that *anguish for breath* and *hunger for air*—that deep inspiration and short moaning expiration—which is always present in severe cases of cholera; for, in order that free expiration be possible, it is necessary, not only that there should be a free admission of air into the air-cells, but also that a corresponding change of blood in the capillaries of the lungs should constantly be going on. A retardation of this flow causes an imperfect purification of the blood from its carbon, which fact can be demonstrated by an analysis of the exhaled air, which contains less carbonic acid gas than it does normally. The air passes out nearly unchanged, causing thus the characteristic *cold breath* of cholera patients, and as the vocal organs partake of the universal drying process, they become rigid, and naturally cause the voice of the patient to become changed into the peculiar *cholera-voice, which is rough and coarse, with imperfect articulation.*

The very distressing and painful spasms or cramps, which contract the muscles into hard, round knobs, are doubtless caused by central irritation, and it is quite probable that this irritation originates in the same drying-out process which pervades the whole system. During the algid stage the temperature sinks to 93.5°, in rare cases to 88° F.; the pulse is from the start feeble, and little or not

at all hurried; exceptionally, only, it is as high as 96 or 100; often it becomes thready and hardly perceptible; even the heart's diastole may, in bad cases, be no longer recognizable while its systole continues.

The SPECIFIC CAUSE of cholera is not yet positively known. The *mycetic theory*, however, which ascribes the origin and development of cholera to *parasites* of the lowest form and smallest size, seems to be the one which now-a-days is most generally accepted, though not sufficiently proven.

The disease is of a most violent character, destroying life quickly. Its mortality is fearful! The virtues of Homœopathy alone have rendered it less fatal. If recovery takes place, all the symptoms may, by a perfect reaction of the system, be speedily extinct; but in case of imperfect reaction, the disease changes into a kind of *typhoid fever*, which is sometimes complicated with different local inflammatory symptoms, such as pneumonia, pleuritis, bronchitis, parotitis, splenitis, or diphtheritic exudation in the pharynx, intestines, vagina and bladder, so that even if the patient lives through the attack of cholera itself, he may be carried off by its consecutive symptoms.

THERAPEUTIC HINTS.—The best prophylactic is no doubt **Sulphur**, as recommended by Dr. Hering in his Domestic Physician. Take fine precipitated Sulphur (milk of Sulphur), sprinkle about half a teaspoonful of it into each stocking, boot or shoe (whatever you wear); repeat it about twice a week. Further, as stagnation in the capillary circulation of lungs and heart ensues, it is of the highest importance that the patient should be urged from the beginning to breathe as deeply as possible, in order to keep up a lively circulation—feeding the blood with as much oxygen as possible. For the same reasons the best drinks which could be offered to such patients might be *oxygenized water*.

As there is, before and during an epidemic of this kind, generally a prevalence of bowel complaints (*cholerine*), it is quite important that these incipient symptoms should at once be attended to. We shall frequently find indicated:

Aloes, constant rumbling in abdomen with a feeling as if he must have a stool, but no evacuation following. (C. C. Smith.)

Asar. eur., in nervous and timid persons, who constantly feel chilly, or complain of cold hands, feet, knees or abdomen, even the hottest room or warmest covering does not relieve this chilly

feeling; constant nausea, with loss of appetite or loathing of food without any gastric derangement; perfectly clear tongue; rumbling and gurgling in the abdomen, likewise attended with nausea.

Bryon., diarrhœa in the morning after getting up, with previous cutting pain in the bowels.

Carb. veg., after exposure to heat of sun or fire (cooks, blacksmiths, masons, etc.), ushered in by hæmorrhage from bowels; associated with flatulence.

Chin. sulph., for the following precursory symptoms: great sensitiveness against external influences; general weakness; internal bad feeling as of coming illness; anxiety, down-heartedness, moroseness, despondency, laziness and lassitude; aversion to all kind of work; chilliness, especially in the back, alternating with flashes of heat; heaviness in head as from a cold; loss of appetite, loathing and nausea; pressure in stomach worse after drinking water; pressure in pit of stomach up into the throat; pain in the bowels, especially after eating; constipation or soft stools followed by weakness; heaviness and aching in all the limbs, especially in the joints. For this precursory stage, which, in the different single persons, of course, consists only in part of these symptoms, I gave **Chin. sulph.**, 0.01 to 0.06, one dose every evening, for eight days. None of the persons thus treated were attacked by cholera. If I ever should live to see another cholera epidemic, I would give **Chin. sulph.** and *ozonized water*. (Aegidi, *A. H. Z.*, Band 85, S. 191.)

Coloc., bloody diarrhœa, with violent pain in the bowels, extending down into the thighs.

Ipec., nausea and vomiting predominating *without*, or at least always *previous* to, an alvine discharge.

Iris vers., violent pain at the pit of the stomach or around the navel, or in some cases still lower down in the abdominal region, at or before every fit of vomiting and purging.

Mercur., bloody, slimy discharges, with tenesmus.

Phosph. ac., especially in the summer season; painless, watery discharges; great rumbling in the abdomen; bloatedness; sticky tongue.

Secale, painless diarrhœa, with tingling and numbness in the limbs.

Veratr., diarrhœa, and vomiting of a turbid water, with cold perspiration on the forehead.

The *developed cholera* may point to one of the following remedies.

Camphora, Hahnemann's discovery; he says: "When cholera first makes its appearance, it usually attacks in the following way: great prostration at once; the patient cannot stand; his features become distorted; his eyes sunken; his face and hands bluish and icy cold, with coldness of the remaining parts of the body; his features express despair, and his whole action anguish, as though he would suffocate; half-stupid and senseless, he moans and groans in a hoarse, husky voice, expressing nothing particular, unless questioned. He has burning in the stomach and œsophagus, and cramps in the calves of the legs and in other muscles; when touched in the pit of the stomach he screams out; he has no thirst, no nausea, no vomiting, no diarrhœa. In such cases Camphora gives immediate relief; one drop of the tincture on sugar every five minutes." These observations of Hahnemann have been verified since by hundreds of physicians, and in thousands of cases.

As additional symptoms I might mention: vertigo, nausea, vomiting, with cold perspiration, especially in the face; faintness, asphyxia; cramps everywhere; the upper lip is drawn up, exposing the upper teeth. It is also recommended after previous use of allopathic medicine. Its beneficial action is seen in a gradual glow and warm perspiration all over the body; when of course its use must be discontinued. Overdosing calls for Coffea.

Next to Camphora in frequency of its use stands—

Ver. alb., anguish; fear of death, or indifference; vertigo; eyes sunken; nose cold; face cold, pale, distorted, bluish, bloated; great thirst for cold water, and *vomiting after drinking*, with great debility or diarrhœa at the same time; *the discharges are gushing, profuse, rice-water-like*, with cramps and colic in the bowels; cold feeling in the abdomen; tongue pale or bluish; dry or yellow-coated; cold; voice feeble and husky; very anxious oppression and constriction of the chest; tonic cramps commencing in hands and feet, gradually spreading all over; pulse very small, thread-like; coldness all over; cold perspiration.

Cuprum, Hahnemann says: "If, after Camphora, there should not soon be a change for the better, apply at once Cuprum x." Its sphere of action is the following: very painful clonic spasms in different parts of the body, so that the patient cries out; great pressure in the pit of the stomach, worse from contact; constric-

tion of the chest; great thirst; for a while after drinking cold water vomiting and diarrhœa not very prominent; anxiety; cold face; blue lips; coldness all over; skin inelastic; urine suppressed.

Besides these compare the following remedies:

Acon., restlessness; coldness externally, but to the patient a sense of burning heat through the whole system; excessive thirst, but cannot retain anything; vomiting and purging of *green*, watery fluid; collapse. Two drops of tincture in half a tumblerful of water, two teaspoonfuls every half hour. (W. Boyce.)

Arg. nitr., during the height of the disease, when the respiratory muscles are attacked with spasms, so that the patient can scarcely breathe, neither speak; to drink a swallow of water, or the approach of a handkerchief to the nose, causes a feeling of suffocation, with terrible anxiety and thoughts of self-destruction; during the oppression severe stitches in the pit of the stomach; after taking any fluid it appears as though it were running straight through the intestinal canal without stopping.

Arsen., great anguish, indescribable, with constant restlessness; fear of death; sudden prostration; eyes sunken; nose pointed; face pale, cold, distorted; tongue dry, brown, or black; excessive thirst for cold water, but drinking little at a time, which is immediately thrown up; violent burning in the stomach and bowels, worse after throwing up; urine suppressed; voice hoarse; great oppression and constriction of the chest; skin wrinkled, dry, cold, blue; cramps, clonic and tonic, in different localities; cold, sticky perspiration. May be indicated in all stages of the disease; best sign of its proper choice is the reappearing of urinary secretion.

Bryon.[30], a few globules each time after vomiting alone, or after vomiting and purging; it cured even the worst cases with loss of consciousness, inability to speak, icy coldness of the skin, wrinkled skin; pulselessness. (Haynel.)

Carb. veg., in last stage; when already the discharges, up and down, the cramps, and general reaction have ceased; when the patient lies in a sopor, and is pulseless, with cold breath, cold tongue, or coldness all over, a picture of perfect collapse.

Cicuta, violent cramps; tonic spasms of the muscles of the chest; loud hiccough; eyes turned upwards; soporous condition.

Laches., vomiting renewed by the slightest motion, and nausea attended by a great flow of saliva.

Crot. tigl., gushing out of watery discharges mixed with whitish flakes, with rumbling, griping in the bowels, and afterwards burning in the anus; discharges always brought on after drinking and motion; great exhaustion; faintness and dizziness.

Hydr. ac., when there is a rapid progress of the disease towards asphyxia; marble coldness of the whole body; pulselessness; cessation of diarrhœa and vomiting; hiccough; paralysis of the œsophagus; when drinking, the fluid runs gurgling down the œsophagus; long fainting spells; trismus; tetanus.

Jatropha, violent vomiting of a whitish, jelly-like substance, resembling the white of an egg; discharges from the bowels in gushes; gurgling noise in the abdomen, sounding as if a bottle were being emptied; cramps in the calves of the legs, drawing them flat; at the same time the mind is in a kind of ecstasy and takes little notice of these painful spasms; or anxiety and fear, as though cramps in the calves would set in; burning of the abdomen; belly drawn in; marble coldness of the body; pulselessness; cold, sticky perspiration.

Ipec., in light cases, where the vomiting predominates over the alvine discharges; vomiting mostly of a sour fluid, without diarrhœa.

Phosphor., tongue coated white; excessive thirst; vomiting after the water has become hot in the stomach; hiccough after eating; belly bloated; rumbling and rolling in the abdomen; the rice-water evacuations contain grains like tallow; oppression; great sinking of strength.

Secale, dizziness, deafness; painful retching; profuse diarrhœa; unsuccessful urging to urinate; skin wrinkled; tingling in the limbs; cramps and coldness; aversion to heat and being covered.

Sulphur, first recommended by Dr. Hering, because it corresponds to its commencement in the morning, its cramps in the calves of the legs, its indifference of mind, and lastly its red spots, furuncles, etc., during convalescence. Diarrhœa and vomiting at the same time, wakens the patient after midnight; the body grows cold and blue, with intense cramps in the calves of the legs and soles of the feet; pain in the region of the liver.

Tabac., cold perspiration, with constant, deadly sickness and vomiting now and then; cramps and tearing in the limbs.

Consecutive symptoms may call for—

Acon., if there be high, inflammatory fever; hard, strong pulse; congestion of the head or lungs; great restlessness; fear of death.

Bellad., congestion of the head with violent delirium; visions and illusions of senses.

Bryon., typhoid symptoms; pain in all the limbs on moving.

Canthar., excessive sensitiveness of the abdominal walls; burning in the umbilical region and deep in the pelvic cavity; rumbling in the abdomen and tenesmus followed by bloody evacuations; urination drop by drop, with great burning; suppression and retention of urine.

Mur. ac., difficult speech; moaning and groaning during sleep; sliding down in bed.

Phosph. ac., indifferent; without pain; delirium; drowsiness; sopor.

Rhus tox., typhoid condition; red tip of tongue; pain in all the limbs on lying quiet.

Tereb., if **Canthar.** has failed.

Dr. J. Buchner's therapy is the following: **Cholerine**: Phosph. ac., Ipec., Veratr. **Cholera**: Amm. sulph., Camphora, Cuprum, Cupr. ac., Ipec., Veratr. **Cholera paralytica**: Nicot. **Typhoid ex diphtheride**: Nitr. ac. **Typhoid ex morbo Brightii**: Arsen., Cupr. ac., Phosphor. **Other remedies** which may be indicated: Carb. veg., Cicuta, Ox. ac., Jatropha, Crot. tigl., Opium, Plumbum, Secale, Tart. emet., Tabac.

Cholera Morbus, or Nostras or Europæa.

The attack comes on almost always suddenly, and frequently in the middle of the night. It consists of vomiting and purging, spasmodic pain in the abdomen, sometimes cramps in the legs, rapid loss of strength, and coldness of the skin. The thirst is great, the vomiting constant, and the purging consists of fetid fluid discharges containing a large quantity of bile at first, which, however, gradually diminishes, until, at last, the discharges approach the rice-water appearance without smell. The rapid and great loss of fluid will naturally cause similar symptoms as we observe in cholera Asiatica, and especially in children, old people or debilitated persons it may reach even a fatal termination. Then the intestines become paralyzed, vomiting and purging cease, yet the transudation continues; the pulsations of the heart grow fainter and the radial pulse ceases altogether; the sensorium becomes clouded and the patient sinks from sheer exhaustion. Yet such are only exceptional cases; as a general event the patients soon revive again. It prevails mostly during summer

heat, although there are cases in other seasons; and it seems to be excited especially by exposure, checked perspiration, drinking large quantities of ice-water, or imprudence in eating. It differs from Asiatic cholera in not being caused by a specific poison—in not being to such a degree epidemic, violent and fatal. It differs from poisoning with arsenic by its purging and vomiting setting in at the same time; while in cases of poisoning the vomiting almost always precedes the purging.

THERAPEUTIC HINTS.—Compare Cholera and Cholerine. Besides the remedies there characterized may be indicated:

Ant. crud., vomiting and diarrhœa, watery or slimy; great thirst for cold water, especially at night; tongue coated white; after sour wine.

Chamom., after sudden taking cold; severe, cutting pains in the abdomen; vomiting of bile; painful, bilious evacuations; great irritability of mind; impatience; restlessness; child wants to be carried about; also after chagrin.

China, discharges mostly painless, containing undigested food; worse in the night, with great fermentation in the bowels, which are bloated; fulness of the bowels; sour eructations, and better for a while afterwards; especially after new or sour beer.

Diosc., vomiting and purging of watery stools, with painful cramps in the stomach, bowels, and extremities.

Euphorb. cor., forcible vomiting and diarrhœa of watery fluid, with sinking, anxious feeling at the stomach; faintness; slow and weak pulse; cool skin, feet, and hands, which become affected with painful cramps; painful spasms in the intestines; cold sweat on the body and extremities; death-like sensation, with anxiety of mind; no desire to live unless relief comes soon.

Ipec., if the vomiting is predominating; from sour, unripe fruit, etc.

Iris vers., vomiting and diarrhœa tinged with bile, with violent pain in the pit of the stomach, or around the navel, or still lower down in the abdominal region, *at or before every fit of vomiting or purging;* burning in the rectum and anus; periodical spells of aggravation about two or three o'clock, A.M.

Veratr. is the most important and the most frequently indicated remedy. Purging predominates over vomiting; the stools follow in quick succession, become watery, lose all coloring matter and are gushing out, with violent pain in abdomen, or ab-

sence of pain; cold feeling; great thirst; nausea and anxiety. Drinking increases the symptoms.

Summer-Complaint.

Under this title two different affections of early childhood are frequently mixed up, namely, **Cholera infantum** and **Catarrhal inflammation of the intestines.** Both are most prevalent during the heat of the summer, and both show a high death-rate of infantile life.

Cholera infantum corresponds to cholera morbus, and is characterized by severe vomiting, purging, rapid prostration and collapse. In consequence of the rapid loss of fluids through the intestinal canal and the consequent suppression of urine, *anæmia* and *uræmia* soon result with symptoms similar to hydrocephalus. The child grows restless, utters plaintive cries, rolls its head, commences to squint and falls into stupor—a state of things which Marshall Hall has designated with the name of "**Hydrocephaloid,**" in contradistinction to hydrocephalus acutus, which is of an inflammatory nature. Compare Anæmia.

Its CAUSES are: Extreme summer heat, 90° F. and above, for a great length of time; crowded cities with their pestilential influences of impure air, unclean streets, etc., improper alimentation, the combined influence of which the tender age of infants up to two years is frequently not capable of resisting.

Cholera infantum often associates with intestinal catarrh, and this is no doubt the reason why in common practice both forms are frequently confounded. Still we ought to distinguish those cases with severe vomiting, profuse watery evacuations, rapid prostration and collapse, as cholera infantum.

The **Intestinal catarrh of infants** during summer heat, the true **Summer-complaint,** is an inflammatory disease of the intestinal tract, but preponderantly an inflammation of the large intestines, though both the small and the large may be affected at the same time, hence it is also called **Entero-colitis.** Its pathological changes correspond to those described under Intestinal Catarrh.

Its CAUSES are the same as those of cholera infantum, to which we must add *dentition.* For it is not without good reason that mothers most dread the second summer of their infants, and are loath to wean them, if possible, before that period has passed.

The most persistent of its SYMPTOMS is *diarrhœa.* The evacua-

tions, however, vary greatly. From feculent masses at first, the dejections become more liquid, of a whitish or ash-colored, or yellowish tint, changing to green or greenish, or leaving a mere greenish or dirty stain on the diaper; or they are slimy, at times mixed with streaks of blood. As long as the dejections contain feculent matter, they mostly have a very penetrating smell, afterwards they assume a peculiar, sweetish, fleshy odor, sui generis of summer-complaint.

Vomiting is a frequent symptom, but it comes and goes. There is generally a great deal of thirst, but the liquid taken is not retained. There is always more or less fever, and the pulse rises to 120 and 140 or higher.

Acute cases generally run their course in about two weeks, when convalescence gradually sets in, or they assume a chronic nature with occasional improvements and relapses. Unfavorable symptoms are: continual gagging; great frequency of the stools and the appearance of hydrocephaloid symptoms.

THERAPEUTIC HINTS.—The large majority of people can not afford to escape the continued and excessive summer-heat by going to the sea-shore or to the mountains. For them it will be well to at least avail themselves of the few cool morning and perhaps evening hours, to take the child out *riding*, either in the cars or in a children's carriage, or where a river is near, on a steamboat. The riding motion, as Dr. Wm. B. Chamberlain has truly remarked, is certainly of great benefit to the patient, and, in conjunction with the breathing of a purer atmosphere, will surely produce gratifying results. The high temperature may also be lowered by sponging the child all over with lukewarm water several times a day, and if there be excessive thirst without the ability to retain any drink, it will be well to apply a wet compress over the epigastrium.

Alimentation.—The mother's milk is absolutely the best, provided the mother be well herself. If the child has been weaned, resort must be taken to cow's milk, thinned by adding two-thirds of *boiling* water. The *boiling* water is, at least, partially freed from disease-germs; it raises the temperature of the milk to a desirable degree of warmth, and indicates at once whether the milk to be used is already undergoing the process of sour fermentation or not. A little salt may be added. If milk is always rejected, barley well boiled and strained may be tried. Of all

the artificially prepared children's food (prepared, of course, always according to some scientific reasons, à la retort), I am no great friend. Some of them may answer very well in certain cases, but I know of no individual indications for their several uses. Sometimes I have found that a little red wine in water remained in the stomach, when nothing else would. Beef-tea I abominate, and for reasons already given elsewhere. Simple mutton or beef-broth may be recommended; but at times *solid* food is absolutely necessary, especially in weaned children who have already some teeth. It is the process of *mastication* which here comes into play and which excites the necessary mixing of saliva with the food. A mutton chop sprinkled with a little salt and roasted quickly on a gridiron, and a pretzel, crisp and fresh from the baker, often do wonders.

Cholera infantum.—**Ver. alb.** and **Ipec.** are undoubtedly the most important of all remedies, but compare also Arsen., Camphora, Cuprum, Phosphor., Secale, Sulphur and Tabac. The special indications for each are given under Cholera and Cholera Morbus.

Summer-complaint, proprie sic dictu.

Acon., teething children with high fever, restlessness, crying, biting fists, and frequent green or mucous stools.

Aethusa, stools watery, greenish, without smell; milk disagrees, is thrown up at once, at times in coagulated lumps; vomiting of white, frothy matter; after stool and vomiting the child dozes, utters plaintive cries now and then, and again commences to doze; its face is pale, with a painful expression around the mouth; great prostration; eyes fixed and staring; convulsions with clenching the thumbs and turning the eyes downward.

Ant. crud., child cannot bear to be touched or looked at; tongue coated white; violent vomiting, renewed after taking food or drink; diarrhœa profuse.

Apis, stools of various colors, offensive or odorless, painful or painless, usually worse in the morning. Stupor interrupted with shrill shrieks; head hot; eyes red; tongue dry; skin dry; hands cold and blue; abdomen tender, sunken; urine suppressed; pulse thread-like; impulse of heart violent.

Arg. nitr., stools green, like spinach; diarrhœa after fluids, after sweet things which he craves. Sopor; large pupils; periodical trembling of the body.

Arsen., stools green, watery, offensive; vomiting immediately after drinking; great thirst, but drinks little at a time; great

restlessness; great prostration; all worse after midnight. Sopor, or coma vigil with staring, spasmodically moving eyes; dilated pupils; difficult hearing and speaking or swallowing; dry tongue; sooty nostrils; sunken abdomen; involuntary stool and urine; stiff neck; palsy of the extremities.

Baptis., very offensive diarrhœa, day and night; the child can only swallow fluids, no solids even after it has learned to eat.

Bellad., stools green, with hot head and cold feet, profuse micturition; white tongue with red margin; dry mouth and lips; drowsy with frequent starting during sleep.

Benz. ac., extremely copious watery stools, flooding everything about the child; fetid urine.

Borax, constant vomiting and gagging; painless stools, at first frothy, thin and brown, later cadaverously smelling with little bits of yellow feces, or colorless and slimy; belly soft, flabby and sunken in; general emaciation; sopor; child makes an anxious face when carried down stairs, or put from the arms into the cradle.

Bryon., any motion brings on diarrhœa; a sudden change to hot or cold weather aggravates the symptoms. Great thirst with drinking large quantities; hot head and soporous condition; very fretful and irritable.

Calc. carb., stools whitish, watery, most frequent in the after part of the day, often of a sour smell; sour vomiting; open fontanels; sweat of the head during sleep; old, wrinkled face; cold face; cold arms up to the elbows; retarded dentition; emaciation; bloated, big belly. The child makes an anxious face when being lifted up from the cradle, or being carried up stairs.

Calc. phosph., scrawny children with dirty white or brownish complexion; skull soft and thin, crackling like paper when pressed upon; old, wrinkled looks of the face; dry skin, diarrhœa with much flatulence during dentition; greenish thin stools; longing for bacon or ham fat. Hydrocephaloid conditions.

Camphora, the skin is cold as marble, and yet the child will not remain covered; half stupid and senseless; utter prostration. Vomiting and diarrhœa may be present or absent. Choleraic symptoms.

Chamom., stools watery, green, or like chopped eggs, often from any motion of the child, with crying, colicky pains and drawing up the legs. Teething; often one cheek red and the other pale;

hot perspiration about the head. The child is very cross, wants to be carried about.

China, painless and often undigested discharges, worse in the night, and after eating. Also attended with colicky pains and fermenting in the bowels. When the looseness has been brought on by eating fruit; also when the patient has become very weak from profuse and long-continued diarrhœa.

Coffea, during dentition diarrhœa watery and painless, with sleeplessness and threathening convulsions.

Coloc., colicky pains relieved by lying on the stomach.

Crot. tigl., sudden forcible discharges, after drinking, while nursing or eating, during summer.

Cuprum, stools green with painful vomiting; spasms preceded by violent vomiting of mucus; convulsions.

Dulcam., stools green with mucus from catching cold during hot weather.

Ferr. phosph., frequent stools, green, watery, or hashed, mixed with mucus, scanty; straining at stool, also retching. Child rolls its head, moans; eyes half open; face pinched; urine scanty; pulse and respiration accelerated; starting in sleep. (J. C. Morgan.)

Helleb., loose, watery, or jelly-like stools; scanty, dark urine; hydrocephaloid symptoms.

Ignat., "sudden metastasis from bowels to the brain during dentition; sudden paleness of face, with rolling-tossing motion of the head; difficulty of swallowing; delirium, with convulsive motion of the eyes and lips." (Lilienthal.)

Ipec., nausea and vomiting predominate; stools green like grass, or fermented like yeast.

Iris vers., nausea and vomiting of sour fluid; stools thin, watery, copious, tinged with bile; boils about the child's head.

Kali brom., frequent, green, watery discharges, with violent abdominal spasms, during which the abdomen gets hard; thrush in the mouth; convulsive motions of eyes and limbs. (C. Mohr.)

Kreosot., constant vomiting and greedy drinking; stools grayish or white, chopped, very fetid; belching or hiccoughing, especially when being carried; the child moans constantly, or dozes with half-open eyes; face cold, with a pale bluish tinge, especially on the temples and around the nose and mouth; rapid emaciation; quick, scarcely perceptible pulse.

Laches., most important when the discharges have a penetrat-

ing, fetid smell and assume a purulent character. Great heat of the abdomen.

Lycop., "stool of green, stringy, odorless mucus."

Magn. carb., sour-smelling discharges up and down; pain in the bowels.

Merc. sol., dark green stools, slimy, sometimes bloody with tenesmus; cannot get done.

Natr. mur., vomiting and diarrhœa, worse during the day; great thirst; general emaciation, most conspicuous around the neck, which appears thin and shrunken. (Hering.)

Nux vom., stools early in the morning; after errors in diet.

Phosphor., vomiting as soon as the water has become warm in the stomach. (Lippe.) The anus remains open all the time the child is straining. (Boyce.) Hydrocephaloid symptoms from great exhaustion.

Phosph. ac., painless, profuse, watery, or whitish stools, not weakening for a while, but being followed at last by great exhaustion.

Podoph., the stools frequently change in character, and are usually most frequent during the early part of the day; prolapsus ani during stool. Dentition, head hot, rolling head from side to side, moaning; flushed cheeks; gagging, retching or vomiting of frothy, green mucus, or of food.

Psorin., thin, watery stools, smelling like carrion; fretful, sleepless; the entire child has a disagreeable smell.

Rheum, griping, sour stools, the whole child smells sour.

Sepia, stools green, smelling putrid or sour; "boiled milk particularly disagrees."

Silic., in thin and scrawny children with sweaty head (Boyce), and sweaty, offensively smelling feet.

Stannum, "the child will not be quiet in any other position than carried over the point of its mother's shoulder." (Boyce.)

Sulphur, stools worse in the morning; psoric patients prone to eruptions here and there, and to excoriations behind the ears and between the legs. Hydrocephaloid symptoms.

Sulph. ac., "excessively restless children, when Chamom. was of no service; aphthous condition; mouth generally dry."

Ver. alb., vomiting and purging, the latter predominates; great thirst, but drinking increases nausea and diarrhœa. After vomiting or purging great exhaustion, cold sweat on forehead; and cold tongue. One of the most important remedies in cholera infantum.

Zincum, "on awaking the child appears frightened and its head rolls from side to side; during sleep it cries out, starts and jumps; feet constantly fidgety." Hydrocephaloid.

Hydrocephaloid. Compare: Æthusa, Apis, Arg. nitr., Arsen., Bellad., Borax, Bryon., Calc. phosph., Camphora, China, Cuprum, Ferr. phosph., Helleb., Ignat., Laches., Lycop., Phosphor., Podoph., Silic., Sulphur, Veratr., Zincum.

Constipation.

Constipation has a relative meaning. Some persons feel perfectly well if they have a stool in two or three days. I know women who, in perfect health, have not more than one evacuation in a week. With most people one discharge every day seems to be the norm. Retarded action of the bowels is frequently accompanied with dizziness, headache, palpitation of the heart, hypochondriacal symptoms, hæmorrhoids and flatulency. If long continued it may lead to dilatation and hypertrophy of the intestine and in some rare cases, where actual impaction of hardened and dried fæces ensues, to inflammation, ulceration, and even perforation of the gut.

Constipation may be brought about: by a diet containing too large an amount of undigestible matter (beans, corn and the like coarse food), which forms dry feces difficult to evacuate; by diseased conditions of the mucosa in consequence of chronic catarrh, which diminishes the peristaltic action of the bowels; by muscular weakness of the intestines in consequence of anæmia, chlorosis, long-continued diarrhœa, *the use of purgative medicines*, or the improper suppression of the desire for stool at regular hours; by paralytic affections of the intestines in consequence of opium, lead or other poisons, or cerebral or spinal diseases; by abnormal losses of *fluids* in diabetes, profuse lactation or sweats; by mechanical obstructions outside the intestines from tumors, the enlarged or displaced womb; or by the presence of foreign bodies within the intestines, such as biliary stones, fruit stones, etc.

Retarded action of the bowels in acute diseases, such as typhoid fever, scarlatina, measles, etc., is *always* of benefit to the patient, and ought *never* to be interfered with in any crude manner.

THERAPEUTIC HINTS.—If frequent resort has been had to purgative remedies, this bad habit must at once be stopped. A care-

ful regulation of diet, a strict adherence to the rule: "try to have the bowels moved at a regular hour every day or every other day"; the administration of injections of luke-warm water, and the occasional kneading of the abdominal walls by the fist will go a good way in helping to improve many cases of habitual constipation. But all this will not do in all cases; remedial agents will often be required, as may readily be inferred from the numerous causes by which constipation may be induced. For lazy chaps and wise ones, who either do their whole business with Nux vom. and castor oil, or sneer at the symptom under Alumina: "the rectum is inactive," because they imagine that in constipation the rectum must necessarily always be inactive!—the following special hints are not written:

Æsc. hipp., dry, uncomfortable feeling in the rectum, as if it were filled with small sticks; very painful hæmorrhoids, with little bleeding; aching and lame feeling in the small of the back, extending to the sacrum and hips; worse when getting up after sitting.

Alum., the rectum is inactive, there is no desire for stool; the evacuation can be effected only by straining the abdominal muscles, even when the stool is soft; stools hard, knotty and scanty, or sticking to the anus like putty; ailments from lead.

Amm. mur., hard stools, crumbling to pieces when evacuated, requiring great effort to expel them, followed by soft stools; feces covered by glairy mucus.

Anac., urging without being able to expel anything; the rectum feels as if stopped up with a plug; the expulsion not taking place immediately, he experiences a painful twisting and turning in the intestines across the abdomen.

Bryon., hard, dry stools, as if burnt; of large size and passed with difficulty; rheumatic tendency; irritable and prone to fits of anger; after castor oil; during hot weather.

Calc. carb., hard, large, partially undigested stools; after stool feeling of faintness; oozing of a fluid from the rectum, smelling like herring-brine; too early and too profuse menstruation; restless sleep after three o'clock A.M.; scrofulous diathesis.

Capsic., after drinking, urging to stool, but only slime is passed; feeling of heat in the abdomen.

Carb. veg., urging with tingling in the rectum and pressure on the bladder; labor-like pain; discharging feces in fragments, which are tough and scanty; burning in bowels; tympanitis.

Caustic., frequent and unsuccessful urging, causing a good deal of pain, anxiety and redness of the face; stool comes off in pieces; at last soft, and of the size of a goose-quill; stool passes better while in a standing position.

Chelid., stools like sheep's dung; pain in liver and cæcal region; gurgling in abdomen, which is distended; crawling and itching in rectum, and reddish urine.

China, large accumulation of feces in the intestines, with dizziness and heat in the head; *difficult stool, even when soft.*

Conium, frequent urging without stool, or a small quantity being expelled at a time; chilliness during stool; palpitation of the heart and tremulous weakness afterwards; the flow of urine suddenly stops and continues after a short intermission; dizziness when turning in bed.

Ferrum, flushed head and face with cold hands and feet; anæmia.

Graphit., hard, knotty stools, with tenesmus and stitches in the rectum; sometimes the stool is only of the size of lumbricoides; a quantity of mucus is expelled with the stool, or the hard feces are covered with mucus; itching blotches about the body, which emit a glutinous fluid; erysipelatous or ulcerative processes of the legs.

Hepar, sluggishness and inactivity of the bowels, in consequence of which the abdominal muscles must bear down in order to effect an evacuation, which is hard or not, but insufficient; after mercurial dosing.

Hydrast., constipation, headache and piles; after stools, for hours severe pain in the rectum and anus; colic pains with fainting turns and heat in the bowels; anæmia; remittent fever; "after purgative medicines." (Goodno.)

Iris vers., constant nausea, bitter eructations and vomiting; burning in epigastrium; colic with cutting pains and piles; hemicrania.

Iodium, desire for stool, without evacuation; it takes place with great facility after taking some cold milk; discharges of thick mucus, or purulent matter; part of the feces being retained.

Kali bichr., stools dry, scanty, knotty; painful retraction of the anus; debility, headache, coldness of the extremities; tough secretion from any of the mucous membranes.

Kali carb., too large-sized feces; inactivity of the rectum; severe, lancinating, tearing and cutting in the anus; violent pain in the small of the back, as if broken.

Laches., constipation of years' standing; the anus feels closed; the feces press against it all the time without passing; only single flatus are passed; the feces have a cadaverous smell; hæmorrhoids, with stitching pain in the varices when coughing or sneezing.

Lycop., ineffectual urging, owing to contraction of the rectum (sphincter ani); distressing pain in the rectum for hours after evacuation; excessive and painful accumulation of flatus in the abdomen; red, sandy deposit in the urine. Irritable and restless in the afternoon.

Magn. mur., stools large and in hard lumps; urgent pressure in the rectum, the stool comes out in small pieces and seems as if burnt; shuddering for a short time after stool. Pain and distress every few days in the hypogastric region.

Natr. carb., insufficient stool, with tenesmus, followed by burning in the eyes and urethra, with great sexual excitement.

Natr. mur., pressure from the navel downwards into the pelvis, or a leaden heaviness through the pelvis and across the bladder, worse when walking, and better when sitting in a bent forward position; hard, dry stools fissuring the anus, make it bleed; a number of bad feelings in the anus *after stool;* also cutting in the urethra *after* micturition.

Nitr. ac., hard, scanty stools; long pressing when going to stool; painful burning in the rectum, especially after micturition; urine emitting an intolerably strong smell.

Nux vom., constant, ineffectual urging to stool; large, hard feces; piles; headache; unrefreshing sleep; after previous use of purgative medicines; coffee and liquor drinkers; use of high-seasoned food; sedentary habits.

Opium, stools in hard, black, round balls; decided torpor and inertia of the rectum; vomiting of stercoraceous substances in consequence of intussception; incarcerated hernia; lead poisoning.

Phosphor., stools narrow, dry, long, and difficult to expel; exceedingly painful cramps in the rectum after stool.

Phytol., constipation of long standing; pain shooting from the anus and lower part of the rectum along the perinæum to the middle of the penis.

Platina, difficult expulsion of scanty stool, adhering to the part like soft clay; after poisoning with lead; travelling in the cars.

Plumbum, stools consisting of small hard balls; constriction and drawing up of the anus; frequent, violent colic; drawing in of the abdomen in the region of the navel; numb extremities; knife drops from his hands.

Podoph., constipation with great difficulty; prolapsus ani; frequent micturition; weakness and soreness of the back; especially after washing.

Prun. spin., hard stool; intermitting stool, looking like the excrements of dogs, in small lumps, with stitches in the rectum, extorting cries.

Pulsat., with menstrual disorders, or after suppression of intermittent fever by quinine.

Ratan., urging sensation in the small of the back, as if there would be stool; hard stool with straining; and sudden stitches in the anus; fissures of the anus.

Ruta, scanty, hard stool; frequent urging to stool, with protrusion of the rectum, also during stool; the rectum protrudes when stooping ever so little, and especially when squatting; a considerable quantity of flatulence is emitted whenever the urging takes place.

Sabad., violent urging to stool, with noise like the croaking of frogs; necessity of sitting a long while, then passes an immense quantity of flatulence, which is followed by an enormous evacuation, after that, burning pain in the abdomen.

Sarsap., obstinate constipation, with violent urging to urinate; urging to stool, with contraction of the intestines, and excessive pressure from above downwards, as if the bowels would be pressed out; during stool violent tearing and cutting in the rectum; afterwards a repetition of the same symptoms.

Selen., stool so hard and impacted that it has to be removed by mechanical aid; the feces contain threads of fecal matter like hair.

Sepia, unsuccessful urging to stool, only wind and mucus being passed, with sensation in the rectum *as of a lump having lodged in it;* contractive pain in the anus; thence in the perinæum and vagina; oozing of moisture from the rectum. During pregnancy.

Silic., stools composed of hard lumps; after long straining the protruding feces suddenly recede into the rectum.

Sulphur, constant urging, pressing on the rectum as if it would protrude, with pressing on the bladder; prolapsus ani; palpitation of the heart; after stool excessive stinging and sore pain in the anus, preventing lying or sitting down; rush of blood to the head; cold feet; faintness regularly, towards 10 or 11 o'clock, A.M

Sulph. ac., hard stool, consisting of small, black lumps mixed with blood, and with such violent pricking in the anus that she has to rise on account of the pain; climacteric age; constant

flashes of heat; tremulous sensation in the whole body without trembling.

Tabac., constipation; tympanitic bloating of the abdomen; dyspnœa.

Thuja, obstinate constipation, fever, inactivity, or intussusception; hard balls; violent pain in the rectum, which prevents the passage; offensive perspiration at the anus and in the perinæum.

Verbasc., scanty discharge of stool, like sheep's dung, with straining.

Ver. alb., chronic costiveness with heat and pain in the head; stools in black, round balls, or large and hard, or first portion of the stool of large size, the latter coming out in thin strings, although of the same consistence and color. During stool turning pale and faint, chilly with anxiety and cold sweat on forehead.

Zincum, dry, hard, insufficient, and difficult stool; afterwards violent bearing down in abdomen, relieved by passage of flatus up or down.

Hernia; Internal and External Strangulation.

Both consist of a "constriction or nipping of a portion of bowel by the edges of some natural or artificial orifice through which it protrudes, with consequent arrest of the circulation of blood in it, and impediment to the passage of fæcal matters along it." (Bristowe.)

Internal strangulation may take place in the foramen Winslowii or the foramen ovale, or in any abnormal fissure or opening which has been formed by inflammation and consecutive adhesion, and formation of bands and strings within the cavity of the abdomen.

External strangulation may take place in the inguinal or in the crural canal, in the opening which gives passage to the infra-pubic vessels, in the sacro-sciatic notch and in the umbilicus. But it does not follow by any means, that the displacement of a portion of the bowel in any of these by-ways should always be followed by strangulation. If, however, strangulation does result, the symptoms are the same whether it be internal or external strangulation: there is acute pain in the region of the lesion, which is followed by obstinate constipation and vomiting at first of yellow and greenish and later of fæcal matter—*Miserere.*

The Diagnosis of internal strangulation is obscure, because its

symptoms are common to any kind of occlusion of the intestinal tract. External strangulation in case of ordinary hernia may always be detected by careful examination.

THERAPEUTIC HINTS.—The first endeavor in any case of hernia, whether strangulated, incarcerated, or merely protruded, must be to reduce it. The manipulations used in this endeavor are called *taxis*, and consist of various procedures. The patient is laid on his back, low with the shoulders and high with the pelvis; the leg of the affected side is flexed upon the thigh and the thigh upon the abdomen, and then by rotating the limb inward the columns of the ring are relaxed.

Or the patient is raised by his feet, so that by its own gravity the protruded bowel is retracted into the abdominal cavity.

Or the patient is placed in a semi-prone position towards the affected side with the thigh flexed upon the body; his eyes are covered with a towel and then some cold water is suddenly dashed upon the chest and epigastrium, which causes by its shock a quick and deep inspiration, in consequence of which the hernia slips back.

Or, according to Baron Sentin's method, "seek with index-finger for aperture giving issue to hernia, pushing up skin sufficiently from below in order not to be arrested by its resistance. Pass the end of the finger slowly between viscera and herniary orifice, depressing the intestine or omentum with the pulp of the finger. This stage demands perseverance. Now curve the finger like a hook, exerting enough traction on the ring to rupture some fibres, causing a cracking very sensible to the finger, sometimes to the ear. When this crack is not produced, submit the fibres to a continuous forced dilatation."

Or place a jar filled with hot air over the abdomen, when, by cooling, the contents of the abdomen are drawn up into the jar and the hernia out of its enclosure—*dry cupping*.

Or draw the hernia gently outwards with the right hand in order to disengage it from the neck of the sac, and then push gently with left thumb and index-finger upon the upper part of the tumor, thus emptying its upper portion first, when the rest will follow. A gentle, but persistent pressure is necessary. A peculiar gurgling noise in the abdomen pronounces the reduction of the hernia.

Any of these methods may succeed; but the carefully selected

remedy may do it without them, or at least facilitate our success greatly and diminish more and more the necessity of the knife.

Acon., soreness, burning and heat and throbbing in tumor; excessively sensitive to touch; after fright and cold.

Arsen., when the tumor assumes a dark red or livid appearance, with great restlessness and prostration.

Aurum, the testicles are slow in lowering down into the scrotum; inguinal and umbilical hernia in children from crying.

Bellad., soon after strangulation, which is caused by spasmodic action of the muscular fibres, and before inflammation has set in.

Borax, if in children the anxious face is present during any downward motion.

Calc. carb., rhachitic children; big-bellied and prone to diarrhœa.

Coccul., when the protrusion takes place very slowly, as if from a paralytic state of the abdominal ring.

Laches., livid appearance of the tumor; coughing or sneezing goes like a knife through the tumor.

Lycop., has been very effective in hernia of right side, with rumbling in abdomen and great fulness; also in women of a gentle disposition.

Magn. carb., *scrotal* hernia.

Nux vom., sudden violent pain in hernial region; drawing and tearing, and spasmodic constriction in the abdomen, with nausea, vomiting of sour mucus; constipation with constant ineffectual urging to stool; or, similar to Coccul., slow protrusion in aged persons, with squeezing pain in the hernial region, fulness in abdomen, periodical nausea; tumor not very sensitive, is soft and doughy; later comes pinching and griping in abdomen, periodical nausea, gulping up of salty or bitter water, vomiting, etc. Nux vom. is frequently indicated and especially if errors in diet have preceded; if it fails Coccul. follows well.

Opium, soporous condition; red face; distended abdomen with flatus; anti-peristaltic motion, belching and vomiting; bowels absolutely closed, with constant urging to stool and urine.

Plumbum, has relieved strangulation where Acon., Bellad. and Nux vom. failed, in many cases. (Baumann.)

Rhus tox., after straining or lifting heavy loads.

Silic., "frequent colic, relieved by the discharge of offensive flatus; tenderness about the hernial tumor; vomits much milk after nursing." (Guernsey.) Boils; abscesses; offensive sweat of feet.

Stannum, "inguinal hernia; the child has curdy stools and much colic, which is relieved by laying its abdomen across the nurse's knee, or against the point of her shoulder." (Guernsey.)

Sulph. ac., left side, in melancholic and phlegmatic persons; after carrying heavy loads. V. Boenninghausen considers it as one of the most important remedies in inguinal herniæ.

Thuja, "sweat only on the uncovered parts, while covered parts are dry and hot." (V. Boenninghausen.)

Ver. alb., anti-peristaltic action, hiccough, cold sweat, nausea, with sensation of fainting and violent thirst.

Torsion or Twisting of the Bowels.

This takes place most frequently at the sigmoid flexure when, by a disproportion (mostly congenital) between the length of the S-loop and the smallness of its mesenterial root, the overdistended sigmoid flexure, filled with gas and feces, is rendered liable of rolling about its axis, and by its own weight and inactivity is prevented from straightening or untying itself again. This occurs most frequently in advanced life.

Twists also take place not unfrequently when by unusually long mesentery portions of the ilium are rendered freely movable and are thus made liable to twist around their own axis. Peritonic false ligaments or omental adhesions running directly across the pedicle of the twisted loop may fix it in its twisted position, causing, by degrees, a permanent occlusion of the bowels, which is often preceded for a long time by colics, meteorism and constipation. "Occlusion itself comes on acutely, with severe symptoms of internal incarceration, rapid collapse, vomiting, meteorism, and usually violent tenesmus, with frequent, sometimes bloody diarrhœa, followed by death within the first twenty-four hours—on the average on the fourth day." (Leichtenstern.)

A *lateral kinking*, the result of dislocation, is seen most frequently in the cæcum and ascending colon, when they are rendered movable by an unusually long meso-colon and become displaced inward or into the left hypochondrium. "But the kinking is, in itself, insufficient to produce definite impermeability, which requires the addition of some compressing cause, most frequently the mesentery of a convolution of the small intestine, which overlies the bent point and obstructs it by compression." (Leichtenstern.)

Intussusception; Invagination.

By this is meant "the prolapse or slipping of a tuck of intestine into the cavity of the portion of intestinal tube immediately below it, wherewith it is continuous." (Bristowe.) It takes place in consequence of paresis of a limited portion of the intestine associated with vigorous peristaltic action of the portion below, just as prolapsus recti may follow violent anal tenesmus. It has been observed at all points of the large and small intestine. The ileo-cæcalis is the most common form in childhood; in adults, ilium and ileo-cæcal invaginations occur nearly as often. The ilium invaginations are found most frequently in the lower and lowest part of the ilium, while colon invaginations are more frequent in the descending colon and sigmoid flexure.

The length of bowel involved in an intussusception varies from two to three inches up to three or four feet. The course of these lesions is also variable. Invagination may be reduced spontaneously, or by suitable treatment; or the invaginated portion of the bowel, from being compressed, may inflame, die and slough off either entire, or what happens oftener, in pieces or in shreds.

This separation occurs, in the majority of cases, from the eleventh to the twenty-first day after the production of the invagination; in chronic cases it may not happen until after several months. Or, and this is by far the most frequent in chronic cases of ileo-cæcal invaginations, the two cylinders become fixed by a solid union, when after the complete disappearance of the swelling the canal of the invaginated portion becomes again permeable; or in very acute cases, the invagination leads to immediate and permanent occlusion. The patients die in from three to six days, with the symptoms of internal strangulation, with or without peritonitis or perforation.

The Symptoms are ushered in suddenly with violent colic, which is followed by vomiting, especially in children if the lesion be situated high up. Now follows diarrhœa, which lasts at least until all the contents below the lesion are discharged. These evacuations are always mixed with blood, which oozes from the compressed and congested portion of the invaginated bowel, and consist at last of mere bloody mucus with violent tenesmus, which appears earlier and is the more intense the nearer the intussusception is to the rectum. In this case there frequently follows a paralysis of the rectal sphincter and patulence of the anus,

through which the bloody passages escape involuntarily, a symptom especially found in children. The next and quite important symptom is the usually *cylindrical, sausage-like tumor*, which can be felt in the abdomen almost always in colon and ileo-cæcal invaginations, but seldom in those of the ilium. In some cases the intussusception extends so low down into the rectum that its lower extremity may be detected by the finger inserted into the anus.

Invaginations especially in the small intestines are frequently found in the bodies of children, but unaccompanied by any inflammatory changes; they seem to have been produced during the last struggle, and must therefore be considered as mere cadaveric changes.—

Ileus or **Miserere** are terms which denote stercoraceous vomiting in consequence of any kind of occlusion of the intestine.

THERAPEUTIC HINTS.—*Ileus* or *Miserere* hint to: **Acon.**, Arsen., **Bellad.**, Chamom., Coccul., Coloc., Cuprum, Diosc., Lycop., Nitr. ac., **Nux vom.**, **Opium**, Platina, **Plumbum**, Raphan., Rhus tox., Sambuc., Silic., Sulphur, **Thuja**, **Ver. alb.**, Zincum.

Acon., inflammatory symptoms; restlessness and impatience.

Alum., pinching pain in bowels; obstruction from inactivity and dryness of rectum; dry retching, or mucous vomiting; low-spirited, weeping, hopeless mood.

Arsen., burning pain; restlessness and prostration; better from hot applications.

Bellad., pain in right ileo-cæcal region; cannot bear any touch; clawing around the navel; vomiting, can keep nothing down, is pale and weak. Prolapsus ani; paralysis of the sphincter ani. During teething.

Carb. veg., in slow cases, when other remedies have failed and the pulse is intermitting.

Coloc., neuralgic pain in bowels; obstruction as if from dryness of the bowels; serous, bilious vomiting without nausea; angry mood; throws things out of his hands; indignation. (Hayward.)

Cuprum, violent pain in umbilical region; total obstruction of bowels; violent, continued, convulsive vomiting of blood and fæces; singultus; great agony.

Kali bichr., pain as in enteritis; vomits in rapid succession bilious, bloody matter; the blood is bright and clotted. Listless, indifferent, languid mood. (Hayward.)

Nux vom., crampy, remittent pain in bowels; contraction or restriction of bowels; sour, mucous and bloody vomiting; quick, spasmodic pulse and hot skin; irritable, sullen, quarrelsome mood.

Opium, constipation; vomiting of fecal matter; excessive thirst; distended abdomen, painful to touch; crampy motions of the intestine, at times like a rolling up of a hard body in right hypochondrium; frequent hiccough; small, frequent pulse; cold extremities; distorted face.

Phosphor., paralysis of sphincter ani.

Plumbum, violent colic in region of naval with complete obstruction of bowels and stercoraceous vomiting; anus feels as if drawn upward; swelling in the ileo-cæcal region; depressed and restless disposition.

Thuja, ileus; spasmodic stricture, as if something alive was pushing out; ineffectual urging to stool, with erections. Sweats only on the uncovered parts of the body, while the covered parts are dry and hot.

Ver. alb., colic; burning, twisting, cutting pain with nausea and vomiting, worse from food, better after wind passes; cold skin; cold perspiration; small, spasmodic pulse; restless and anxious.

As mechanical means to reduce invaginations, *injections of air* have been used by means of an ordinary bellows attached to an œsophageal sound until a considerable abdominal tension and the desired effect was produced. Dr. W. Danforth procured in a desperate case the same effect by injecting one ounce and a half of soda, dissolved in a pint of water, and followed by the injection of a dessertspoonful of tartaric acid in a cupful of water. The thus suddenly generated gas untied the knot.

Hæmorrhagia Intestinalis, Intestinal Hæmorrhages, Malæna,

Takes place in consequence of either—1. *Obstructed circulation of blood through the vena porta*, as in the case of cirrhosis of the liver, diseases of the heart and lungs, compressions of the blood-vessels by large abdominal tumors; or, 2. *Erosions or degeneration of the blood-vessels* from intestinal ulcers during typhus, yellow fever, scurvy, etc.; or, 3. *Lesions caused by corroding or cutting substances, wounds*, etc.; or, 4. Suppressed normal, or habitual, bloody discharges, as menstrual or hæmorrhoidal. A copious, internal

hæmorrhage is characterized by sudden paleness, coldness of the body, collapsed features, weak pulse, fainting, fits of chilliness, and discharges of blood from the bowels. The discharged blood, when it comes from the upper portion of the intestines, is generally dark and mixed with intestinal contents like tar. It is generally red and fluid when it proceeds from the lower portions. The exact seat of the hæmorrhage, however, cannot be determined, as physical examination gives no hint whatever in regard to it. The bleeding may occur even within the stomach, as I have mentioned when I spoke of hæmatemesis; and a black, tar-like appearance of stool is not a sign that it contains blood, as it may be colored by bile. This, however, may soon be settled. Throwing the passage into water it colors the water *red* when it contains blood; and when it contains bile the water is colored *green* or *yellowish*.

THERAPEUTIC HINTS.—Compare the above-stated morbid conditions, which are the causes of the intestinal hæmorrhage.

As generally indicated, the most important remedies are Alum., Arsen., Carb. veg., China, Eriger., Hamam., Ipec., Nitr. ac. Sulphur.

Hæmorrhoids, Piles,

Consist of a dilatation of the hæmorrhoidal veins, to which belong chiefly the plexus of veins lying in the submucous tissue of the lower part of the rectum, and in the adjoining subcutaneous connective tissue, also the venous radicles in the mucous membrane, the perirectal plexus, and the adjoining venous plexuses of the bladder, uterus, vagina, and the sacral canal. These dilated veins form tumors of different sizes, according to the amount of venous turgescence, from the size of a pea to that of a cherry or walnut, which sometimes encircle the entire anal opening like a bunch of grapes. When thus situated outside the anal margin they are called *external*, when within the anal margin *internal hæmorrhoids*.

There are usually longer or shorter intervals between these spells of turgescence, during which the patient feels comparatively free from hæmorrhoidal inconveniences. However, repeated attacks of turgescence will gradually change either the mucous membrane or the submucous tissue, and produce catarrhal swel-

ling of the mucous membrane, or hyperplasia of the connective tissue, or atrophy of these tissues under the influence of the pressure of the varices. The natural rugosities of the rectal mucous membrane become permanently thickened and inflamed, polypous growths are formed and associated with more or less pedunculated tumors, resulting finally in suppuration and consequent purulent discharges—*white* or *slimy hæmorrhoids.*

The principal predisposing cause of piles seems to be the position of the hæmorrhoidal veins, as the lowest branches of the abdominal vessels, and in their want of valves to sustain the return column of blood in its course towards the vena porta. When a retardation or stagnation by some means or other in this backward moving column takes place, it is obvious that its whole weight must press downwards upon its lowest branches, overfilling and dilating them. Such retardation of the refluent stream of blood may arise from different conditions:

1. From tumors within the abdominal cavity, which press upon the veins of the rectum; a gravid uterus, etc.
2. From diseases of the liver, which obstruct the vena porta.
3. From diseases of the lungs, by which its capillaries become either obstructed or destroyed.
4. From diseases of the heart, by which the veins become overfilled with blood.
5. From a general relaxation of the abdominal veins, in consequence of using too much wine, coffee, tea, or leading a sedentary life.

The fact, however, that frequently all members of the same family suffer with this complaint, seems in favor of the assumption that piles are of a hereditary nature, probably consisting of a congenital weakness or yielding of the walls of the hæmorrhoidal veins.

Symptoms.—As forerunners to their local appearance we observe: fulness and pressure in the epigastrium, disturbed digestion, bloatedness of the abdomen, costiveness, dull pain in the small of the back, also in the head and nape of the neck, hypochondriacal disposition, disinclination to work, and especially to mental occupation, all symptoms which denote a disturbed action in the abdominal organs. After a shorter or longer duration of these symptoms, we find a gradual development of the local symptoms at the anus—the beginning of varicose veins, their gradual growth, their turgescence and their collapse, alternating

in longer or shorter intervals. Thus the whole complaint is of a slow and tedious nature, changing constantly from better to worse. The occasional spells of bleeding are frequently attended with a feeling of relief, though they do not better the morbid process itself in any way; they become in some cases habitual, assuming a regular type of from three to four weeks intervals. In such cases the organism becomes so much accustomed to them, that when they are suppressed in consequence of mental emotions, or taking cold, or by external medical applications, etc., other disturbances set in, such as congestion of the head, lungs, stomach, liver, kidneys, etc., which may result in nosebleed, hæmoptysis, bloody urine, apoplexy, etc.

In consequence of the stagnation of the refluent stream of blood, which is caused by liver, heart or lung diseases, may arise, also, especially in older individuals, a varicose state of the veins of the neck of the bladder, of the uterus or vagina, causing hæmorrhages from these organs, or slimy discharges, painful micturition, etc.

"Dilatation of the sacral plexus is revealed by pain and a feeling of weight in the sacral region. When the communicating plexus of the spinal canal is affected, it may, by compressing the roots of the nerves, give rise to sensations of weight, numbness, formication, and pain in the lower extremities, or in the lumbar region, so as to simulate sciatica or a lesion of the cord itself." (Quinke.)

The PROGNOSIS depends upon its predisposing and proximate causes. Actual danger can only exceptionally arise from its local manifestation.

THERAPEUTIC HINTS.—Acon., bleeding piles; stinging and pressure in anus; abdomen feels full, with tensive, pressive and colicky pains; bruised feeling in back and sacrum; inflammatory stage.

Æscul. hipp., protruding piles, purple, bleeding slightly, attended with constipation and a sensation as of sticks were in the rectum; severe fulness and bearing down; aching pain and lame feeling in the back.

Aloes, protruding piles, like bunches of grapes; hot and sore; relieved by cold water; when urinating he has a feeling as though some liquid discharge from the bowels would take place at the same time; much flatus with stool.

Alum., stool hard, and of the shape of laurel-berries, attended with cutting pain in the anus, as if it were too narrow; succeeded by a jet of blood from the rectum, followed by soreness in and along the rectum; perineum sweats and is tender to the touch.

Amm. carb., varices protrude during stool, and without stool; they are moist, and with a pain as from excoriation; discharge of blood during and after the evacuation; burning pain in the rectum, itching of the anus.

Ant. crud., tingling, itching, and burning of the varix; mucous secretion from the rectum, staining the linen yellow; alternate constipation and diarrhœa.

Apis, small protruding varices, which sting, burn and smart intolerably, making one very irritable and fidgety; stool constipated, urine scanty.

Arsen., varices, which burn like fire, particularly at night; fissures of the anus, with impossibility of voiding urine; urine bloody; small of the back feels as if broken; impossibility of stooping; burning in the skin and veins; great weakness and restlessness; useful in cases of drunkards.

Bellad., bleeding piles with severe pain in the small of the back, as if it would break; incarcerated varices from spasmodic constriction of the sphincter ani, with great pain from the slightest touch; on this account the patient must lie with the nates separated; dysuria; congestion of the head; feverish restlessness.

Calc. carb., profusely bleeding piles; protruding; painful when walking, better when sitting; too early and too profuse menstruation; habitually cold, damp feet; after suppression of the hæmorrhoidal flow, constant giddiness, especially on going up stairs; heaviness and fulness of the head; swelling of the pit of the stomach; palpitation of the heart; offensive sweat on the feet, making the soles of them raw.

Capsic., the varices bleed a long time; the flowing blood causes a burning pain in the anus; the stool is mixed with bloody mucus; there are drawing pains in the back and cutting pains in the belly.

Carb. veg., protruding piles, blue, even suppurating, emitting a terrible smell; burning in the rectum; oozing of humor from the rectum; flatulence; congestion of the head, and nosebleed; after high living.

Cascar., frequent and excessive bleeding from the rectum during and after hard, brown stool in large lumps, and without stool.

Caustic., varices large, painful, stinging; burning when touched, hindering stool; increased by walking and reflection; fistula ani.

Chamom., bleeding hæmorrhoids with colic; frequent urging and diarrhœa; pain in the back, worse at night; ulcerating fissures at the anus; great restlessness, crying, screaming, tossing; sweating; angry, peevish and ill-humored.

Colchic., with spasms of bladder and discharge of blood from it. (Stens, Sr.)

Collins., flowing piles, incessant, though not profusely, or protruding piles without bleeding; sensation in the rectum as if sticks, sand or gravel had lodged there; growing worse as evening approaches till late at night, better in the morning; constipation of the bowels and pain in the epigastrium, with loss of appetite; or diarrhœa.

China, bleeding piles; burning and burning-itching; tingling in the anus, with creeping and itching extending into the urethra, attended with burning in the glans.

Eriger., bleeding piles; hard, lumpy stools.

Ferr. phosph., with catarrh of stomach and bowels.

Graphit., varices and prolapse of the rectum, even when there is no desire for stool, as if the rectum had lost its contractile power and had become paralyzed; painful, burning cracks (rhagades) between the varices; chronic constipation with hardness in the region of the liver; stool hard, knotty with blood and slime; scanty and delayed menses; leucorrhœa like water.

Hamam., profusely bleeding hæmorrhoids, characterized by burning, *soreness*, fulness, and weight; at times rawness of the anus; the back feels as if it would break off; pricking pain, worse from pressure, from the wrist to the shoulder along the course of the superficial veins; the same pricking pain in the region of the heart; scanty menses.

Hepar, inflammation and suppuration of the hæmorrhoidal tumors.

Hydrast., when a small loss of blood is followed by excessive weakness. (H. F. Hunt.)

Ignat., bleeding piles; violent, shooting pains high up into the rectum; prolapsus recti during stool; cutting, tearing in the rectum, continuing for hours after stool; for quiet people, or such as get easily excited and easily depressed. After confinement.

Kali carb., in consequence of constipation with too large stools; the hæmorrhoidal tumors swell and become large and very pain-

ful; they bleed, especially during micturition, and emit slime afterwards; riding on horseback ameliorates the pain considerably for the time being. After confinement.

Laches., protruding hæmorrhoids, very painful; a stitching pain is felt to go through the hæmorrhoidal tumors, especially during coughing or sneezing; also at the critical age, with scanty menstrual flow.

Leptand., frequently bleeding piles; constipation and distressing pain beneath the sacrum.

Lycop., protrusion of varices, painful when sitting; distention of the whole abdomen, and rumbling after stool; cutting in the rectum and bladder; long-continued pain after stool; itching eruption around the anus, painful to the touch; grayish-yellow color of the face; depressed spirits; frequent urging to urinate; slimy or reddish-sandy sediment in the urine.

Mercur., large, bleeding piles during stool, which is watery; hæmorrhage from the rectum during micturition; falling of the rectum, which is black and bleeding; inflammation and suppuration of the hæmorrhoidal tumors.

Mur. ac., largely protruding piles, which look bluish and are exceedingly painful to contact—even the sheet is insupportable; prolapsus ani on passing loose stool during micturition.

Natr. mur., varices, painful, stinging, and humid; protrusion of the rectum; smarting and beating in the rectum; burning at the anus; herpes about the anus; herpes on the boundaries of the hair in the nape of the neck; cutting pain in the urethra *after* micturition.

Nitr. ac., bleeding piles, protruding after each stool; the sharp-cutting pain in the rectum lasts for hours after an evacuation, and is much worse after a loose stool.

Nux vom., all sorts of piles after purgative medicines and external and internal allopathic treatment; in persons of sedentary habits, or addicted to the use of coffee, wine, liquors, spices, etc.; ineffectual urging; constipation; headache; sleeplessness early in the morning; hypochondriac mood; fissures of the anus, with great sensitiveness of the rectum.

Petrol., burning and stitching in the anus and rectum; scurf on the border of the anus; titillating and smarting; itching herpes on the perinæum.

Phosphor., varices protrude during emission of flatus; mucous discharges from the anus, which is constantly open; discharge

of dark, coagulated blood; vertigo, especially on looking up or down.

Phosph. ac., bleeding piles, with intolerable pain in sitting.

Podoph., piles and prolapsus ani, with diarrhœa of long standing; worse in the morning; or constipation with flatulence and headache.

Pulsat., blind and flowing hæmorrhoids; discharge of blood and slime with the stool; colicky pain; painful pressure upon the hæmorrhoidal tumors; backache; fainting spells; mild, gentle and tearful disposition; dryness and bad taste in the mouth every morning; no thirst.

Ratan., protrusion of the varices after hard stool, with straining and violent pressing in the rectum; burning at the anus before and during a diarrhœic stool; fissures of the anus, with great sensitiveness of the rectum.

Rhus tox., sore, blind hæmorrhoids protruding after every stool; drawing in the back from above downwards, with tension and pressing in the rectum, as if everything would come out; labor-like drawing towards the uterus, when standing; pain in the small of the back, as if bruised, when lying or sitting still; going off when moving about.

Sepia, protrusion of piles and rectum, even after soft stool; worse after drinking milk; continual straining pain in the rectum; difficulty of urinating, especially in the morning; a feeling as if drops came out of the bladder, which is not the case; heat, burning and swelling of the anus; the varices become hardened; oozing of moisture from the rectum; soreness between the buttocks.

Staphis., intense pain in the back and through the whole pelvis; enlargement of the prostate gland. (Preston.)

Silic., inflammation and suppuration of the hæmorrhoidal tumors.

Sulphur, all sorts of piles; constant ineffectual urging to stool; or thin, bloody stool, worse in the morning, with soreness of the anus, or single violent stitches in the rectum, also between stools, arresting the breathing and causing him to start; prolapsus ani during stool, particularly when hard; tensive pain and stiffness in the small of the back, as if the parts were too short; inability to stand erect; burning micturition. After suppression of habitual bleeding: congestion of the head; dizziness; palpitation of the heart; pain in the pit of the stomach, with difficulty of

breathing; loss of appetite; sudden hunger, with faintness before dinner; sleepiness through the day, and sleeplessness at night.

Thuja, the hæmorrhoidal tumors are painful when touched *ever so slightly;* sycosis.

Flatulency, Bloatedness, Meteorism of the Abdomen.

We mean by these terms an *abnormal collection of gas in the intestinal canal.* It may be caused:

1. *By certain kinds of food*, such as not well-fermented beer, sweet cider, fresh bread, green peas, unripe fruit, cabbage and the like.

2. *By a morbidly changed condition of the digestive juices*, which cause fermentation of the intestinal contents.

3. *By a relaxed state of the muscular coat of the intestines*, in consequence of which the contents of the bowels are not properly moved forwards, and become decomposed into gaseous substances. For this reason we frequently observe meteorism in severe cases of typhus, pneumonia, acute exanthematic and puerperal fevers, peritonitis, after the abuse of purgative medicines, in diseases of the brain and spine, also in hysteria and hypochondria.

4. *By mechanical obstructions of the intestinal canal*, like strangulated hernia, intussusceptions and twistings of the gut around its own axis.

Symptoms.—The abdomen appears bloated, puffed out, feels either elastic, or more or less inelastic and hard, according to the degree of compression of the gas within. Percussion generally yields a tympanitic sound, unless there be a greater tension of the gas within than of the external air, in which case the percussion sound is not tympanitic, and may be even dull. Auscultation reveals here and there gurgling noises, and even the metallic tinkling may be heard when the fluid contents move within the expanded guts.

Such abnormal expansion of the intestines forces the liver, stomach and lungs higher up into the thoracic cavity, causing oppression, dyspnœa, palpitation of the heart, anxiety, fainting and congestion of the head. The expansion downwards causes pressure upon the bladder, difficult urination, pressure upon the rectum, and frequent desire for stool, and pressure upon the uterus. This abnormal collection of gas is frequently associated

with spells of violent colic, loss of appetite, nausea, etc. Belching, or the passing off of flatus, often gives great relief. The gas generated consists mostly of carbonic acid, or hydrogen, or sulphuretted hydrogen gas.

It is obvious that the PROGNOSIS depends entirely upon the cause, of which meteorism is the consequence. It is of little consequence if produced merely by improper food, or the improper condition of the digestive juices. It becomes a more serious symptom when caused by a relaxed state of the muscular coat of the intestines, and is most serious in cases of intestinal obstruction.

THERAPEUTIC HINTS.—**Carb. veg.**, much belching, sour and rancid; bloatedness of stomach and bowels; oppression of the chest; palpitation of the heart; consequences of high living.

China, distention of the abdomen; oppression of the stomach; eructations, especially after eating; great fermentation in the bowels; after new or sour beer and fruit.

Chamom., attended with severe colic; the abdomen is swollen like a drum; the gas passes off constantly, but in small and insufficient quantities.

Laches., eructations of air affording relief; distended stomach; incarceration of flatulence.

Lycop., constant rumbling and gurgling of wind in the bowels, especially in the left hypochondrium; incarcerated flatulence, which bears downwards upon rectum and bladder, causing a number of bad feelings.

Nux vom., pressure towards the chest and head; oppression of the chest; constipation, with constant, ineffectual urging; after spirituous drinks, coffee, condiments, etc., in consequence of sedentary life.

Pulsat., especially in consequence of spoiled stomach from eating fat things, pastry, warm cakes, fruits, etc.

Besides, compare Gastric and Intestinal Catarrh, Constipation and Colic.

Colica, Enteralgia.

We understand by this term a paroxysmal pain in the abdomen of a purely neuralgic character without any discoverable pathological change within the structure of the intestines, although it

may attend different morbid processes which consist of such pathological changes. The CAUSES are numerous; they may be classed under the following heads:

1. Such as are dependent upon anomalies of the intestinal contents: abnormal quantity or quality of food, *colica saburralis;* or abnormal development of gas, *colica flatulenta, wind colic;* or accumulation of hard feces, *colica stercoracea;* or foreign irritating bodies, like worms, *colica ferminosa;* or metallic bodies, like lead, *colica saturnina;* or copper, *colica æruginosa.*

2. *Such as are dependent upon a disturbed innervation,* either—*a. Primarily* within the great centres of innervation themselves, from mental emotions, in case of hysteria or hypochondria and spinal diseases—*colica nervosa;* or, *b. Secondarily,* in consequence of diseases of other organs, which may cause a pain in the bowels sympathetically on the principle of "reflex action." Hence, authors speak of *colica hepatica* when the liver, of *colica uterina* when the womb, of *colica renalis* when the kidneys, are thought to be the starting point of the colic. Still, we ought to remember that in such cases the pain may not be an intestinal colic at all, but merely an irradiation from the primarily affected parts.

3. Such as are dependent upon *structural changes in the intestines,* among which we may reckon colicky pains in dysentery, catarrhal affections, typhlitis, hernia, intussusception, strangulation, twisting, etc. There is also a kind of colic produced by taking cold, especially of the feet and abdomen, and which is called *colica rheumatica.*

SYMPTOMS.—1. *Pain.* It is of a crampy, severe griping, or twisting nature, coming and going in paroxysms, either in the umbilical region or in the side of the abdomen; oftentimes shifting from one place to another. External pressure sometimes gives relief and sometimes aggravates the pain; in other cases it shows no influence. External application of warm things relieves in a majority of cases, whilst cold things almost always aggravate the pain.

2. *Rolling and gurgling in the abdomen,* occasioned by irregular contractions of the intestines and the moving of their fluid and gaseous contents, which may be felt by the examining hand.

3. *Bloatedness of the abdomen* where there is a great collection of gas; or *contraction of the abdomen,* especially in lead colic.

4. *Constipation;* it is only in rare cases that colic is attended with diarrhœa.

5. *Nausea, vomiting and belching.*

6. *Cold perspiration and extremities; small pulse.*

7. *Anxious, frightened expression of countenance, contraction of eyebrows, and compression of lips.*

8. *Great restlessness;* the patient tries all possible positions to obtain relief—now lying on the stomach, now drawing up the limbs, now bending and pressing the abdomen against a hard object, a chair, table, or bed-post; now sitting down, now walking about, now trying to evacuate the bowels, etc. In some cases, however, the slightest motion increases the pain.

The spells usually last some hours, in some cases longer.

Wind colic ceases as soon as the incarcerated gas finds vent and passes off.

Colic from indigestion is relieved by vomiting or diarrhœa; colic from hard feces by a sufficient evacuation from the bowels.

Colic from taking cold is always relieved by a general warm perspiration.

As there are so many causes for, and so many different affections with which colicky pains may be associated, it is absolutely necessary in each particular case to make as close an examination as possible, in order to find out what lies at the bottom of the painful affection.

Colic from indigestion, or *colica saburralis*, is brought on either from overloading the stomach or from improper or unhealthy food.

Here are indicated—

Nux vom., after coffee, brandy, large meals.

Pulsat., after fat food, pastry and flatulent food.

Ipec., after sour and unripe fruits and salads.

Arsen., after ice-water and ice-cream.

Flatulent colic is characterized by distention of the abdomen, gurgling and rolling in the bowels, or pressure upwards towards the thoracic cavity, causing pain there and shortness of breath, or pressure downwards upon bladder and rectum.

Here are indicated—

Bellad., if associated with congestion of the head.

Carb. veg., when there is a great deal of sour and rancid belching, without much relief.

Chamom., when the abdomen is distended like a drum, and wind passes off only in small quantities without relief.

Lycop., in cases of habitual costiveness and great pressure

downwards upon rectum and bladder, and gurgling under the left hypochondrium.

Nux vom., when there is great pressure upwards toward the thoracic cavity.

Opium, when there is great pressure downwards upon bladder and rectum, without any passing off of feces, gas or urine.

Rheumatic colic follows upon suddenly taking cold, getting wet, etc.

Here are indicated—

Acon., after suppressed perspiration, exposure to sharp north-west wind.

Coloc., cutting, pinching, contracting pain, with hot or cold skin, irritated pulse and a disposition to double up and press hard upon the abdomen.

Dulcam., after taking cold; the griping is attended with nausea in the stomach and followed by diarrhœa.

Pulsat., after getting the feet wet.

Rhus tox., after getting wet all over.

Nervous colic is a consequence of morbid innervation arising suddenly, sometimes without any known causes, showing no abnormity in the abdominal cavity.

Here are indicated—

Coloc., after indignation.

Bellad., clawing around the navel; better from pressure.

Ignat., after grief and fright.

Opium, after sudden fright.

Plumbum, contracted abdomen.

Lead colic—poisoning by lead. Bluish-gray line along the gums; retracted abdomen; pain lessened from external pressure; obstinate costiveness; slow pulse.

ANTIDOTES.—Opium, Platina, Nux vom., Alum., Ant. crud., Coccul., Arsen., Bellad., Podoph., Zincum.

Copper colic, poisoning by copper. Distended abdomen; pain worse from slightest touch; nausea; vomiting; tenesmus.

ANTIDOTES.—Hepar, Nux vom., Bellad.

All other secondary forms of colic are mere attendants upon other disturbances, which either have been considered already, or will be considered later.

SPECIAL HINTS.—Acon., intolerable, cutting pains in the belly, so violent that he screams, tosses about, and is almost beside himself; after taking cold; menstrual colic.

Alum., lead colic, with dyspnœa, or pressing down in the groins like hernia.

Arsen., pains in the whole abdomen, excessive; worse at night, after eating and drinking; better from warm application; with vomiting, or diarrhœa, or costiveness; great anguish, lamentations, tossing about; internal restlessness, which does not allow one to lie still; despair of life; after the use of ice-water, ice-cream; bad sausages, cheese; lead poisoning. In colic after severe burns.

Asaf., distention of the abdomen, with severe pain and a feeling as though something were rising from below upward into the chest and throat; during the height of the paroxysm, fainting; pain better from external pressure; in hysteric and hypochondriac persons.

Aurum, painful accumulation of gas below the left ribs, causing a stitching pain there; coming on even after eating the simplest food.

Bellad., during the pain the transverse colon protrudes like a pad all the way across the belly; while sitting or standing and walking, much worse, with a feeling as though the intestines were loose and dragging downwards; external pressure and bending double relieves somewhat; protrusion in the inguinal region as thick as a finger, which, when pressed upon, disappears with a gurgling sound; pain below the navel, as though a portion of the intestines were seized with the nails, clawing it together; thin purulent stool; congestion of the head; copper colic. The pain comes suddenly and disappears suddenly.

Bryon., after taking cold; cutting, lancinating pain in the abdomen; worse from motion and drinking cold water; bowels constipated; feces hard, as if burnt; tongue coated, white, dry, without thirst; or else great thirst.

Calc. carb., severe spasms in the intestines, especially in the evening and at night, with coldness of the thighs; feeling of coldness in the abdomen; enlargement and hardness of the abdomen, particularly in teething children; diarrhœic, clay-like stools, smelling sour or fetid; sweat on the head.

Carb. veg., fulness and distention of the abdomen, with a feeling as though it would burst; squeezing and pressing in the left side of the epigastrium, or in the region of the bladder; oppression of the chest; belching, tasting sour and rancid; headache; chilliness over the back; hypochondriac mood; worse from eating, if ever

so little; better from emission of flatus or hard stool; colic from riding in carriage.

Caustic., crampy colic of a chronic character; pain from the stomach through to the back, up into the chest, down into the abdomen; belching; rumbling in the bowels; obstinate constipation; tongue coated whitish on both sides.

Chamom., flatulent colic; the abdomen is distended like a drum, or the wind presses here and there against the abdominal walls, with a feeling as if it would pierce through; or the patient has a feeling as if the whole abdomen were hollow, with continual rolling in the bowels and blueness around the eyes; or the excessive pain simulates a sensation as if the parts were rolled up into a ball; vomiting; diarrhœa, green and slimy; or continual passing of small quantities of flatus without relief; great restlessness, anxiety; sticky or hot perspiration; after chagrin, or taking cold. Very irritable mood.

China, distention of the abdomen, with pressing under the short ribs; rumbling and cutting pain in the bowels; worse at night; brought on by eating fruit or drinking new beer; after exhausting illness, loss of vital fluids, profuse perspiration; gall-stones.

Chin. sulph., flatulent colic of an intermitting type.

Coccul., flatulent colic, about midnight, with incessant formation of flatulence, distending the abdomen, going off without relief, and obliging to turn from side to side; belching relieves; the pain is most severe in the epigastric, umbilical and right iliac region; nausea, vomiting; yellow face; cold perspiration, anxiety and restlessness.

Coffea, excessive pains with anguish, great nervousness, loud crying and grating of teeth; suffocative fits; coldness of limbs; convulsions.

Colchic., great distention of the abdomen; also when the abdomen is empty, aggravated by eating; the stomach feels icy cold; after flatulent food.

Coloc., all sorts of violent pains, mostly in the umbilical region, or from the sides concentrating in the middle; the patient doubles up, or seeks relief by pressing the belly against the bed-post or any other hard object, or by lying on the belly; likewise a tight cramp-like pain in the left iliac and inguinal region, which is worse *after* (not during) external pressure, especially observed in women after excess in venere; after indignation; abuse of opium; a cup of coffee generally relieves the pain for a while.

Cuprum, violent spasms in the abdomen and in the upper and lower limbs, in spells; cutting pain in umbilical region, as if a knife were thrust through into the back; screams as though he were being killed, throwing himself upon the floor; singultus and stercoraceous vomiting.

Diosc., remitting, griping pain in the epigastric and umbilical region; or severe pain in left iliac region, running upwards to left kidney, better from crouching together with the hands clasping the knees; or pain in a small spot which feels, as if it were drawn forcibly upwards and backwards towards the spine. Constant desire to defecate and urinate without accomplishing much.

Dulcam., colic when the weather changes suddenly from warm to cold; griping in the bowels, with nausea, and coldness in the small of the back; diarrhœa.

Hyosc., colic as if his abdomen would burst, he presses his fists into his sides; spasmodic cutting, vomiting, belching, hiccoughing and screaming.

Ignat., periodical abdominal spasms, particularly at night, waking out of sleep, with stitches running up into the chest and to the sides; in sensitive and hysteric women.

Ipec., colic of children, with diarrhœa, uneasiness, screaming, and tossing about; after acid or unripe fruit, beer, etc.

Iris, colic of infants with flatulency and constipation, where Chamom., Coloc. and Nux vom. had failed.

Kali carb., colic, as if the intestinal canal were full of water.

Lycop., bloatedness in consequence of incarcerated flatulence and constipation, with urging to stool; a feeling as if the abdomen must burst; belching without relief; passing flatus downwards relieves; renal colic, where the pain is felt along the ureters into the bladder, especially in the right side.

Magn. phosph., intermittent pain, relieved by bending double, by rubbing, and by external warmth and eructations.

Mercur., colic occasioned by the cool evening air, with diarrhœa, chilliness and shuddering.

Nux vom., flatulent distention of the abdomen, with pressure upwards into the chest, and downwards upon the rectum and bladder; would like to belch, but cannot; constant urging to stool without effect, and frequent desire to make water; wind colic, hæmorrhoidal, renal and lead colic.

Opium, when flatulence accumulates in the upper portions of the bowels, causing a distention of the abdomen, especially in

the umbilical region, with antiperistaltic motion, belching and vomiting; the bowels seem perfectly closed, but there is a constant urging to stool and to urinate; the pain is cutting, pressive and twisting; painter's colic.

Oxal. ac., from eating sugar.

Piper meth., agonizing pain, with tossing, twisting and writhing; patient driven irresistibly to change position, without relief; better for a while when his attention is absorbed by something else. (Hiller.)

Platina, painter's colic; pain in umbilical region, extending through into the back; the patient screams and tries to relieve the pain by turning in all possible positions.

Plumbum, frightful pain, particularly around the umbilicus; the umbilicus drawn in towards the spine; obstinate constipation.

Podoph., cramps in the bowels, with retraction of the abdominal muscles, or crampy drawing of the muscles into lumps and knots; lead colic.

Pulsat., colic worse in the evening and at night; pale face; white tongue; no thirst; wants to uncover; grayish diarrhœa; tearful disposition. From eating fat and greasy food.

Rheum, in infants with sour diarrhœa; the child smells sour all over.

Rhus tox., worse at night, and when being quiet; better from moving about, or lying on the stomach.

Sabad., sensation as if a ball of thread were moving and turning rapidly through it. "Oh, my bowels! it runs like a wheel!"

Sepia, boring, burning pain, with great distention and sensitiveness of the abdomen; anxiety; typically recurring towards evening; scrofulous persons.

Stannum, stitches from both sides through the abdomen and through the hips; worse from slightest motion or touch, and when lying on right side; vomiting of water when smelling any kind of cooking.

Sulphur, spasmodically contractive colic, extending into the chest, the groin, and the genital organs; from piles; from flatulence; from eating sweet things; relieved by sitting bent; psoric individuals.

Tart. emet., violent colic, as if the bowels would be cut to pieces; violent cutting and labor-like tearing from above downwards, across the groin through the thighs down to the knees; nausea; accumulation of water in the mouth; shifting of flatulence, with rumbling in the bowels and diarrhœa.

Thuja, hæmorrhoidal colic, with very acute and violent pain in the lower bowels; much flatus, with or without stool; feces hard or fluid and scanty; when fluid there is a sensation in the rectum as if boiling lead were passing through.

Veratr., abdomen swollen and very sensitive; violent pinching pains; no discharge of flatus either up or downwards; the intestinal canal seems closed; nausea; inability to swallow; cold perspiration; anxiety; restlessness; after eating fruit or vegetables.

Zincum, flatulent colic, worse from wine, towards evening, and when at rest; loud rolling and rumbling; retraction of the abdomen; hot, moist flatus passing off without relief; lead colic.

Tuberculosis Intestinalis, Consumption of the Bowels.

Tubercles form not only in the lungs; they are as well deposited in the mucous and submucous membrane of the ilium, especially in Peyer's patches and the solitary glands, in the colon, the cæcum, rarely, however, in the jejunum and duodenum. The tuberculous material, wherever deposited, consists either of yellowish, cheesy masses, or of grayish, half-transparent, so-called *miliary* granules, which, by a gradual dissolving process, produce tuberculous ulcèrs.

Intestinal tuberculosis is rarely a primary disease, but generally part and portion of—

1. *Pulmonary consumption*, to which it adds the finishing blow. In some cases, however, intestinal tuberculosis seems to so predominate over the pulmonary complaint that the latter is concealed by the abdominal trouble.

2. In other cases intestinal tuberculosis attends acute miliary tuberculosis, a form of blood-poisoning, which, under the symptoms of typhus, deposits a great number of fine granules in different organs and tissues. It cannot be distinguished from typhus; nor from tubercular meningitis, if its deposition inflames the pia mater.

Lastly, intestinal tuberculosis may be part and portion of tubercular formations in the peritoneum, the mesenteric glands, and the retroperitoneal glands, all of which are difficult to define.

The Symptoms are not at all prominent or characteristic, only when the tubercles commence to soften in the last stage, an obstinate *diarrhœa* is one of the most prominent symptoms. With it are associated great loss of strength, night-sweats, and partial œdema; the patients finally die with the signs of marasmus.

Obstinate diarrhœa, in conjunction with pulmonary tuberculosis, suggests the following remedies: Arg. nitr., Arsen., Bryon., Baryt. carb., Calc. carb., Calc. phosph., Carb. veg., China, Ferrum, Hepar, Mercur., Nitr. ac., Phosphor., Phosph. ac., (Plumbum) Pulsat., Sulphur. Compare Consumption.

Cancer of the Intestines

Appears either in the form of *scirrhus or fibrous cancer*, or as *medullary cancer* (which is of a softer, marrow-like growth), or as *alveolar cancer* (which is of a jelly-like nature, but of rare occurrence). Compare Cancer of the Stomach. It originates primarily in the submucous and mucous coats of the intestines, or reaches over secondarily from a cancer of the stomach, or of the peritoneum, the liver, ovaries, uterus, or other neighboring organs.

Primary cancer is found most frequently in the rectum; also often in the flexura sigmoidea; very rarely in the remaining parts of the intestinal tube. As it grows, it causes a swelling or tumor from the size of an egg to that of a fist; and by its growth gives rise to intestinal obstruction. Nevertheless its diagnosis may, in certain cases, be one of great difficulty. It may be suggested by partial intestinal obstruction; rarely by total obstruction; also by the general symptoms of cancer cachexia. Or in younger individuals it may cause intestinal obstruction alone, without these general symptoms of cancer-cachexia. Or it may produce merely the general cancer-cachexia without any sign of intestinal obstruction; but in place of it diarrhœa, colicky pain, flatulency, etc., the dejections containing blood, a gangrenous, stinking fluid and pus.

The main points of diagnostic importance are these: The presence of an uneven, potato-like tumor; the slow but steady development of intestinal obstruction; the peculiar dry and ash-colored skin; the fast wasting away in strength and flesh; and the age of the patient, as cancer very rarely appears before the age of forty.

Cancer of the rectum is the most frequent in occurrence. At the beginning of its development, when it causes a pressure upon, and a consecutive swelling of the hæmorrhoidal veins, with occasional bloody discharges, and pain from the os sacrum down into the thighs, it is most easily confounded with hæmorrhoids. Later, however, the obstruction of the rectum becomes more apparent

by the form of the discharged feces, which appear pressed, flattened, angular, or pass off in small, hard nuts, like sheep-dung. Manual examination reveals now a knotted tumor, which encircles the gut like a ring. In its still further advanced stage this tumor suppurates, and the bursting of blood-vessels may occasion profuse hæmorrhages. We sometimes observe in combination with it indurated inguinal glands; and I have seen a case where hard scirrhous infiltrations existed disseminated through the glutæus muscles.

Its Prognosis is, like that of all cancers, very discouraging. Death occurs either in consequence of ilius, or peritonitis after perforation of the gut, or exhaustion.

By means of the following remedies we may succeed in alleviating much suffering:

Apis, Arsen., Bellad., Carb. an., Carb. veg., Clemat., Cannab., Graphit., Hepar, Hydrast., Kreosot., Laches., Phosphor., Phosph. ac., Rhus tox., Sepia, Silic., Sulphur, Thuja.

Polypus of Rectum.

The *follicular* or *soft polypus* occurs generally in childhood, very rarely in the adult, is attached to the mucous membrane by a narrow peduncle and usually protrudes in children after a stool, resembling a small strawberry; it causes no pain but may produce bleeding sufficient to weaken the patient.

The *fibrous* or *hard polypus* is pear-shaped, with a peduncle more or less long and thick, protrudes if low down or attached to a long peduncle, causes some slimy discharge, but rarely bleeds, produces frequently the sensation of unrelief after stool and its peduncle may become girt by the sphincter, which causes great pain.

THERAPEUTIC HINTS.—**Calc. carb.** and **phosph.** are the main remedies. Ligature is the best surgical means.

Fissura Ani.

An anal fissure consists of an abrasion or ulcer usually at the posterior part of the lower circumference of the rectum, although it may occur in any other part of this portion of the anal mucous membrane, which here forms folds or pouches. When looked at

without distending the rectum, the lateral edges only being presented to view, the ulcer appears like *a fissure*, but is in reality an abrasion or a superficial ulcer. On defecation its surface is irritated, exciting spasm of the sphincter muscle, and causing sharp, cutting, burning and straining pains which last at times for two or three hours after stool. This trouble occurs usually in middle life and is more frequent in women than in men.

THERAPEUTIC HINTS.—**Aloes**, when complicated with piles.

Alum. P. S., ulceration of rectum, even fistula.

Arum triph., with retention of urine.

Coloc., burning, sticking and excoriated pain in the anus, with discharge of moisture from the rectum; frequent pressure at the anal sphincter, which ceases on the escape of some mucus.

Graphit., severe cutting pain during evacuation, followed by constriction and aching contraction for several hours, especially severe at night.

Ignat., hæmorrhoids; moderate effort at stool causes prolapsus recti; after stool stitching pain upward into the rectum; recurring pains in the anus of soreness and constriction.

Nitr. ac., very painful, especially after loose stool.

Nux vom., with constipation and great sensitiveness of rectum.

Pæon. off., burning and biting several hours after stool, preventing sleep; must walk the floor nearly all night; exudation of offensive moisture.

Platina, with crawling and itching in anus every evening, frequent urging with scanty stool, painful sensation of weakness.

Ratan., burning in ano before and several hours after stool with protrusion of varices; burning in urethra during urination.

Rhus tox., with periodical profuse bleeding from anus.

Silic., great pain half an hour after stool, lasting several hours.

Besides compare: Amm. carb., Caustic., Gratiola, Mezer., Natr. mur., Phosphor., Plumbum, Sabad., Sepia, Thuja.

Fistula Recti

is produced by the forming of an abscess in the loose areolar tissue around the lower part of the rectum. After bursting outside near the anus its walls contract and become fistulous, forming a *blind external fistula*. If the suppurating process has at the same time opened a way through the rectal parieties into the

bowel, it is a *complete fistula*. *Blind internal fistula*, in which an opening leads into the bowel without an external orifice, are rarely met with, though it may happen that the original ulcerated opening in the rectum is so large as to allow the matter from the abscess in the areolar tissue to escape readily into the bowel without the necessity of burrowing its way through to the outside. Sometimes the sinuses are tortuous or pass in different directions and there may be more than one internal opening. At other times there is an external orifice on each side of the anus which lead to the back of the rectum and communicate with the gut at this part by a single orifice, so as to form a sort of *horseshoe fistula*. In phthisical subjects a fistula may originate in consequence of tubercular ulceration and perforation of the bowel.

The forming of a fistula is always attended with pain, heat, redness and swelling before it breaks externally. Later, after the subsidence of inflammation and tenderness, it remains a constant annoyance by its discharging, more or less copiously, a thin purulent fluid when coming from a blind external fistula, or a brownish fluid from an admixture of fæculent matter, when it issues from a complete fistula. At times the discharge becomes so thin and scanty that it appears as if the sinus were healing, when a fresh irritation again disappoints the sufferer.

THERAPEUTIC HINTS.—The old school knows nothing but the knife, and the modern view that all such affections are but of a local nature, does not make them hesitate in using it, notwithstanding the fact that a large percentage of those operated on in a short time after succumb to tuberculosis of the lungs.

Many anal fistules have been cured by the sole use of internal remedies, and others have been so decidedly relieved, that so doubtful a relief as operation could afford, was never afterwards craved for. The remedies here needed are:

Alum. P. S., ulceration of the rectum, with painful excrescences and fetid, ichorous discharges.

Arsen., despondent; chilly up and down the back; relief from heat; large purple swelling on right gluteal muscle.

Berber., great soreness and pain throughout the entire back, from the sacrum to the shoulders, worse from exertion.

Calc. sulph., Schüssler.

Hydrast., with constipation, piles and ulceration.

Silic., aching, beating, throbbing in lumbo-sacral region; occasional swelling in perineum discharging blood and pus; constipation, stool slips back after much effort.

Thuja, blind external fistula with cauliflower excrescences at the verge of the anus; offensive perspiration around the parts affected.

Besides compare: Calend., Caustic., Ignat., Nux vom., Petrol., Sepia, Staphis., Sulphur.

Prolapsus Recti.

The protrusion of the hypertrophied mucous membrane, often observed in hæmorrhoids, is not a true prolapsus. This, on the contrary, consists of a real falling down and out of all the coats of the rectum, is in fact an eversion of the gut, similar to intussusception, with this difference: that the falling portion of the intestine becomes uncovered and projects externally, while in intussusception it becomes invaginated into that portion of the intestine which is just below it. The extent of the protrusion varies greatly, from an inch to six inches or even more. When not constricted by the sphincter it has the usual florid appearance; when strangulated it appears livid, purple and tumid from congestion. After long exposure the mucous membrane becomes thickened and granular and sometimes ulcerated.

Prolapsus recti is most frequently observed in children in consequence of protracted diarrhœa; less often is it found in adults, and then oftener in women than in men, in consequence of a weakened state of the sphincter, after child-bearing, etc. The protrusion takes place usually during stool, sometimes after any movement, even when standing. The gut may remain constantly protruded, being fixed so as not to admit of replacement. In some cases the protruded portion has even sloughed off.

THERAPEUTIC HINTS.—**Bellad.**, the protruded bowel looks bright red; during dentition.

Ferrum, (R. T. Cooper).

Ignat. has helped most frequently.

Indigo, (Schüssler).

Mercur., when there is great straining.

Mur. ac., when urinating.

Nux vom., frequently in children.

Podoph., with morning diarrhœa.

Ruta, frequent, lumpy, slimy stools, at times bloody; feces often escape while bending over; much flatus; prolapsus always at stool, sometimes without stool. (Mera.)

Sulphur, worse on standing; morning diarrhœa; after easy stool; weak, scrofulous children.

Besides: Apis, Arsen., Calc. carb., Carb. veg., Hamam., Lycop., Mezer., Phosphor., Sepia, Silic., Thuja.

Proctalgia,

Or neuralgic pain in the rectum, here oftentimes as violent as in other places, is relieved by **Kali carb.**, when the pain is stitching and pressing. **Phosphor.**, in violent spasmodic pains, driving the patient about.

Intestinal Worms, Entozöes, Helminthes.

Of the twenty-one intestinal parasites, three are infusoria, nine belong to the tape-worm class, two to the leech tribe and seven to the round worms. Of these only the following deserve a closer mention in this place.

1. **Oxyuris vermicularis**, the *thread*, *seat*, or *pin-worm*, is found in the intestine, from the jejunum down to the anus; the young animals, in their various stages of development, and the mature males chiefly inhabit the small intestine; the pregnant females seem to prefer chiefly the cæcum as their habitat, until their uteri are filled to bursting with eggs, when they gradually descend the large intestine and deposit the chief part of their eggs in the rectum, and occasionally even leave the latter and creep about on the moist skin around the anus. All, eggs, males and females, are finally expelled mechanically with the feces. New crops of oxyurides can originate only if ripe eggs are being introduced again into the stomach where, by the action of the gastric juice and the heat of the stomach, they are hatched in a short time, and the young, very small, fine, delicate worms betake themselves at once to the upper portion of the small intestine, increasing rapidly in size to their full maturity.

The ripe eggs may be brought to the mouth of infants even during birth and later, by the dirty hands of the mother or nurse, or in larger children and grown persons by their own hands, as a kind of self-infection; they may be imparted by

bakers, fruit dealers, cooks, waiters, etc. This is the view taken by *Leuckart, Zenker* and others, resting on numerous experiments, while *Vix* conceives "that all the transformations from the embryo to the adult form take place within the intestine of the infested person without any necessary migration," a view which is not in accord with the general law of development in parasitic animals, nor does it explain all the known facts.

Symptoms appear not until the oxyurides come down to the rectum, where they, by their active boring movements, cause an intolerable tickling and painful itching just within the sphincter and in the folds of the anus, which sometimes, especially at night, becomes almost unbearable. In the female it is peculiarly distressing, from the habit which the worm has of wandering into the vagina; it may produce inordinate sexual excitement in both sexes by sympathetic irritation, and cause erections, pruritus, even nymphomania with consequent masturbation.

Cleanliness of the most scrupulous kind and injections of cold water are generally sufficient for the removal of these parasites, which have not a very long life. The nightly restlessness and intolerable itching which they produce as long as they exist, is most always relieved by **Aconite.**

2. The **Ascaris lumbricoides,** *round worm,* is of a cylindrical form, tapering at both extremities. The female reaches, according to Leuckart, 15 inches in length by $\frac{1}{5}$ inch to $\frac{1}{4}$ inch in breadth, and the male 10 inches by $\frac{1}{8}$ inch. It is of a light brownish or dirty reddish-yellow color. Its head consists of three semi-circular lips, the bases of which are separated from the remainder of the body by a well-marked circular furrow. The mouth consists of the triangular opening formed by the three lips. The tail of the male is always bent towards the abdomen like a hook, on which is seen the cloacal aperture with two spiculæ, which frequently project. The female sexual organs open in a vulva externally at the termination of the anterior third of the body. The ova have a conical form when unripe and are oval when ripe, and have a dark, tough, double shell, and very dark granular contents; they measure $\frac{1}{340}$ inch by $\frac{1}{440}$ inch, and their number has been calculated by Eschricht and Leuckart at about sixty millions in a single female, of which over 160,000 are daily discharged into the intestine of its bearer. If now a person is the possessor of several of these worms, it can easily be seen that his evacuations must become so thoroughly charged with these eggs,

that their discovery by the microscope cannot be of any difficulty. But their further development is not yet fully understood. It may be that the ova hatch in the stomach after being conveyed there directly; it may be that an intermediate host be necessary for their development. However this may be, the development of the worm, once introduced, must be very rapid, for it is quite seldom that very young animals are found in the intestine.

The round worm normally inhabits the small intestine, but has a marked tendency to wander and creep into small apertures, so that it is led sometimes through fistulous channels to quite remote cavities or organs; it has been found in the pleural sac, the gall bladder, the biliary ducts, the spleen, the kidney, the bladder, the muscles of the loin or neck, the spinal cord, the lung, the glottis, the trachea and the Eustachian tube. In the Surgical Museum, at Washington, I have seen the preparation of larynx, into which a round worm had entered and caused death by suffocation.

Symptoms.—When this worm is present in moderate numbers, and occupies its normal habitation in otherwise healthy persons, there is often no disturbance discoverable; but when present in greater numbers or infecting a delicate person it may give rise to *abdominal griping, increased secretion of slime, diarrhœa, vomiting, irregular appetite;* or, they cause reflex or sympathetic symptoms, as, *itching of the nose, anus, genitals; enlargement of the pupils, squinting, increased flow of saliva, restless sleep, with frequent starting and grating of teeth.*

Symptoms like the following: cachectic countenance; blue rings around the eyes; enlarged abdomen, fever, irritation of the brain, fits, convulsions, etc., which have been ascribed to worms, are rather doubtful. In such cases a careful examination will, no doubt, lead to other exciting causes.

THERAPEUTIC HINTS.—In the first place there is no need of disturbing the system with so-called vermifuges. Worms won't eat up a child, nor kill anybody, except in those very rare cases where "one of the critters goes into a wrong passage."

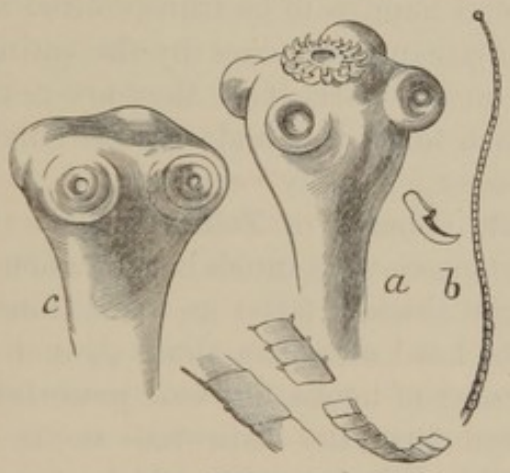
Secondly, those symptoms of irritation are easily subdued if we choose homœopathically between Cina, Spigel., Sulphur, Bellad., and other remedies.

Tape-Worms.

"The tape-worm must be looked upon as a colony of animals having an alternation of generation. The so-called head is the larva-like nurse; the segments of the worm—the proglottides—are the animals with sexual organs. From the head (scolex), without any mingling of the sexes, are produced the segments by a process of budding. The segments remain joined together for a considerable time, but, after they have come to maturity, they separate from the rest of the colony. The head is provided with either two or four suckers, and very frequently with a circlet of numerous small hooks. By means of this apparatus it fastens itself to the mucous membrane of the intestine of its host. As the segments of the chain, the sexual animals, increase the distance from the head, by the development and insertion of fresh segments, they become sexually more developed, increasing at the same time in size. They are hermaphroditic, and generate eggs, in which a six-hooked embryo becomes developed. If eggs containing these embryos find entry into the stomach of a suitable animal, their envelopes become softened or undone, and the embryos are set free. By some way or other they leave the digestive canal and make their way to different parts of the body. If they now meet with conditions favorable to their further growth, "nurses" are developed in them. Should these again happen to be introduced into the intestinal tract of another animal, they fasten themselves on, and another tape-worm colony becomes developed by budding. The time required for the development of the tape-worm colony, viz., till the sexual organs are fully developed and segments are given off, is from eight to twelve weeks. The tape-worm inhabits the small intestine, where, folded into many coils, it lies surrounded with chyme; it can move but little from its original position. Its muscular system seems, in the total absence of anything like an alimentary canal, to serve chiefly as a means of imbibing nourishment, the alternate contraction and relaxation of the several groups of muscles having an effect similar to that produced by a force-pump." (Heller.) This is characteristic of all kinds of tape-worms, of which we have separately to consider:

1. **Tænia solium**, or the **Armed tape-worm**, which attains a length of from 7 to 10 feet, seldom much more. Its head is about the size of a small pin's head, somewhat quadrilateral, owing to the

four prominent sucking discs. On its top front is a moderately prominent rostellum, on which is placed a coronet of small hooks arranged in two circles, an outer and an inner one. Its slender neck is nearly an inch in length, but exhibits to the naked eye no segmentation, it only gradually passes into distinctly visible segments, which at first are so much shorter than broad, that one-half of the whole are found in the anterior ninth part of the entire worm. From this point the segments gradually increase in length more than in breadth, so that finally mature segments, **Proglottides** or **Cucurbitina** measure about one-half inch in length and one-quarter inch in breadth. From this point also the sexual organs are distinctly visible, and in about another ninth lower down, the impregnated eggs enter the uterus. The tænia solium being hermaphroditic, both male and female sexual organs are present in the same joint, and open by a common aperture on



(After Küchenmeister.)

a. Tænia Solium. *b*. Natural size.
c. Tænia Mediocanellata, or Saginata.

the margin and a little behind the middle of each segment, alternating irregularly from one side to the other. The uterus forms a straight line passing down the centre of the segment, from which from seven to twelve branches are given off on each side. Running along the whole length of each side of the worm is a vessel, with transverse communicating branches, which contains a liquid.

The eggs are roundish, and measure when free about $\frac{1}{750}$ inch. The ripe egg encloses the embryo, a delicate mass of protoplasm, armed with three pairs of fine, glistening hooks. After the ripe segments with their eggs have separated and been discharged with the fæces—it has been calculated that one moderate sized

tape-worm contains about five millions of ripe ova—the free joints move about for a time, especially in moist and warm situations, and disseminate their ova widely. No doubt the vast majority of them perishes, but those which happen to be taken with the food into the stomach of a pig, or much more rarely into that of a man, are hatched under the action of the stomachic juices, and the freed embryo (pro-scolex), by a diligent use of its armature perforates the tissues of its present location, and ultimately settles, most generally, in the cellular tissue of the muscles, or in rare cases in the liver or brain. Here it remains and gradually develops into the well-known *cysticercus cellulosæ* of measly pork. This metamorphosis requires about two months and a half for its completion. In this condition the animal remains unchanged for a period not yet certainly known, but which has been estimated at from three to six years. If during this time one or several of the cysticerci happen to be transplanted into the stomach of man, which only can take place by the eating of raw or imperfectly cooked measly pork, it or they are developed into the tænia solium, which takes its abode in the small intestine, and may infest the bearer for many years.

2. **Tænia saginata** (Goeze), or **Tænia canellata** (Küchenmeister), *the unarmed or fat tape-worm*, is much larger, when fully developed, and much stronger, thicker, fatter and less transparent than the tænia solium. Its head measures about $\frac{1}{13}$ inch and has neither rostellum nor coronet of hooks, but four powerful and prominent suckers. Its larval form, the cisticercus tæniæ saginatæ, infests the flesh and organs of the ox, a fact which at once points out the chief difference between its life history and that of the tænia solium. It abounds in Abyssinia and South Africa and is also common in Europe and in this country, and fully as frequent as tænia solium.

3. **Bothriocephalus latus** (Bremser), *the broad tape-worm*, is the largest of all the tape-worms and commonly reaches a length of 17 to 26 feet, and sometimes 60 feet or more. Its head is oblong, or club-shaped, measures $\frac{1}{10}$ inch by $\frac{1}{26}$ inch and has on each side a fissure-like groove in which its suction apparatus is placed. When fresh the worm has a dull bluish-gray color. Its joints are much broader than long, until towards the end of the chain they become square. The genital pores are situated in the centre of the segments, and all are on the same side.

"The ovum after a prolonged sojourn in water develops a

ciliated embryo, which escapes through the aperture in the shell by forcing open the lid and is furnished with three pairs of hooklets. On analogical grounds it is very probable that it enters into the body of some aquatic animal, possibly a fish, but probably a mollusc, and then assumes the larval form, which is at present unknown. The intermediate bearer is probably eaten by man and the larva assumes the adult form in his intestine. Bothriocephalus latus usually occurs several together; it has a somewhat limited geographical distribution; never having been found beyond the limits of Europe, in some countries of which only is it indigenous. It is common in the western cantons of Switzerland, Northwestern Russia, Sweden, Poland, Holland, Belgium and Eastern Prussia; it is less often met with in other parts of Germany and has occasionally been imported into Britain. Low-lying damp regions near the borders of seas and lakes are those in which it is most often abundant. It is found in persons of all ages and sexes, even children at the breast are not free from it." (W. H. Ransom.)

SYMPTOMS.—Some individuals experience not the slightest inconvenience from tape-worm. Others complain of pain in the stomach and bowels, especially after certain articles of food, nausea, variable appetite, slight diarrhœa or constipation. As reflex phenomena are mentioned: itching of the nose, headache, dizziness, getting dark before the eyes, noises in the ears, palpitation of the heart, even chorea and epilepsy. All, or at least many of these symptoms may as well arise from some hysterical or hypochondriacal affection of the patient. However, in the case of tænia solium, which in its embryonic state may infest the most different organs of the human body, it is clear that such and other serious disturbances may arise from its presence.

THERAPEUTIC HINTS.—If no offense is given, why should we use the cudgel. The above-mentioned symptoms are often relieved by a well-selected remedy, which may even cause the parasite to leave. But at times persons have made up their minds to get rid of the "critter," no matter what it costs. As the safest and most expeditious of all the numerous tape-worm remedies, many have recommended—

Kousso, or the flowers of *Brayera anthelmintica*, 2 or 3 drachms put into a tumblerful of water well stirred, so that none of the flowers swim on the top. This done in the evening, let it stand

over night. Administer a cup of coffee before taking it in the morning, to prevent nausea. Then one-half of it is taken, and the other half, half an hour later. If inclination to vomit should set in, it is best subdued by lemon juice. The Taenia saginata requires a larger dose.

Often tape-worms have been removed by the *seeds of the common pumpkin*, mashed up to a mush, or by the use of the *cocoanut*. The *male shield-fern* (Aspidium filix mas), or the *bark of the Pomegranate root* (Punica granatum), are other remedies frequently and often successfully applied.

The surest prevention consists in avoiding the use of raw or not well-cooked pork and beef.

Tricocephalus Dispar,

Or the *whip-worm*, is from one to two inches long, thin in front like a thread, while its posterior portion is thicker. Its chosen residence is the cæcum. There are no symptoms known by which it could be diagnosticated during life. Its life-history, as far as known, is similar to that of the seat-worm.

Anchylostomum Duodenale, Dochmius s. Strongylus Duodenalis.

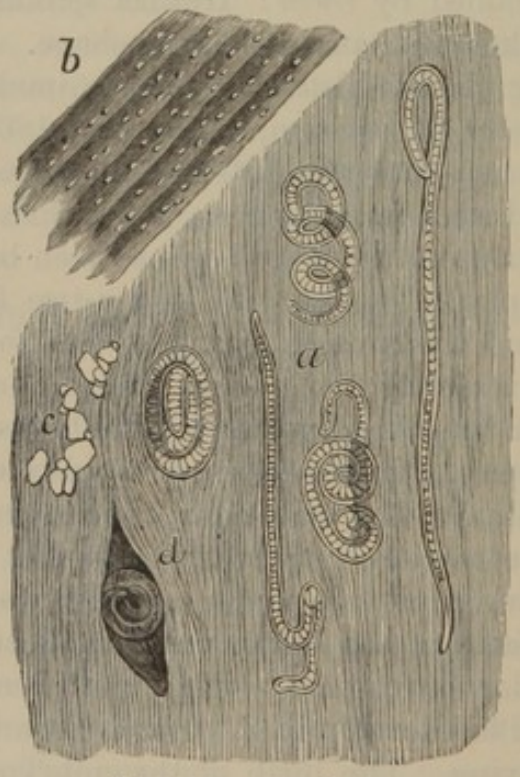
It is a small, cylindrical worm, with its anterior portion, in which the head is situated, curved backwards. Its mouth is provided with a bell-shaped capsule and at its anterior margin with four strong, claw-like hooks and two smaller ones at the opposite side. The males measure $\frac{4}{10}$ inch, and the females $\frac{7}{10}$ inch in length. The tail of the male terminates in a three lobed bursa, in which are placed two thin spicula. The female's extremity is pointed and their genital opening lies somewhat behind the centre of the body. The eggs are oval, and measure $\frac{1}{540}$ inch by $\frac{1}{1030}$ inch. They probably under favorable circumstances hatch, and the embryo enjoys a free existence for a time in mud and muddy water. If taken into the stomach it grows and passes down to the duodenum or jejunum and attaches itself by its powerfully armed mouth to the villi of the mucous membrane, and sucks the blood of its host. It has been found only in Italy, in Egypt, in the countries bordering the Nile, on the Comoro Islands, in Madagascar, in Brazil and Cayenne. It produces

dangerous hæmorrhages in the bowels, followed by an anæmic condition, which is often fatal, and is the cause of the so-called Egyptian chlorosis, the true nature of which was pointed out by Griesinger. Griesinger recommends *turpentine* against them.

Trichina Spiralis.

Only within the last twenty years trichines have become an object of pathological researches, although they had already been discovered by *Hilton* in the year 1821 as numerous white specks visible to the naked eye, in the muscles of a human body, but considered by him as cisticerci. Later, under the microscope, they proved to be *calcified trichinæ capsules*, and about 1835 *Paget* detected in them a minute round worm, which was accurately described and named by *Owen:* **Trichina spiralis**, on account of its form being like a hair and of a spiral shape. However, every thing concerning the life-history of these animals remained unknown until *Zenker*, of Dresden, in the year 1860, called public attention to the fact that this little parasite was the cause of a very painful and even fatal disease. Since then by the labor of numerous investigators the following has been brought to light: "The trichina spiralis is met with under two forms, the intestinal trichina and the muscle trichina. The former or mature trichina is an extremely fine, round, thread-like, slightly coiled worm, with a still finer head, which gradually decreases in thickness towards its point; its hinder extremity is rounded off rather abruptly." (Heller.) The males are from one-half to one-third smaller than the females, and are furnished at the caudal extremity with two pointless, lobular appendages and a genital opening. The females have their vulva at about the termination of the anterior fourth part of their whole length; their eggs after being fructified develop in the uterus to embryos which are born free and living. The birth of the embryos begins on the seventh day after the introduction of muscle-trichinæ into the stomach, and may continue, as it appears, for weeks. Soon after birth the embryos commence to migrate, piercing either, as some assume, through the intestinal wall and wandering from thence through the loose connective tissue towards the muscles; or they enter, as others suppose, the blood-vessels—either directly or by way of the lymph current, in which they are carried to the different muscular parts of the body. As soon as they reach the mus-

cles they force themselve into the primitive fasciculi, cause disintegration of the same, increase in length and thickness, and finally roll up in coils of greater or less size and become encapsuled. After a time a deposition of lime-salts takes place in the capsules, by which they become opaque and visible to the naked eye as little white specks; previous to this calcification only experienced observers can detect them. Under certain circumstances the muscle-trichinæ die and may decay, or they petrify, break into pieces, and their former nature can be recognized only by the peculiar position occupied by the fragments. But as a general thing the vitality of the muscle-trichinæ is almost unlimited and ends even not with the death of their host, while the intestinal trichinæ very rarely live longer than from five to eight weeks, when their propagation has been finished.



TRICHINÆ. (After Heller.)

a. Muscle-trichinæ, magnified.
b. Capsulated and calcified muscle-trichinæ, slightly magnified.
c. Calcified and broken.
d. Capsulated, magnified.

If it happens that the muscle-trichinæ, by eating the meat of its host, be introduced into the stomach of man or a proper animal, they will be freed from their capsules, become sexually mature within about two and a half days, copulate, and after five

days more the females will bring forth *living* embryos, which soon commence to migrate as above described. Trichines are found especially in swine, but have been observed also in the cat, rat, mouse, marmot, polecat, fox, marten, badger, hedgehog and raccoon, and have successfully been bred in rabbits and guinea-pigs, but exceptionally successful only in sheep, calves and dogs.

From this it can be seen that the infection of man is principally carried on by the eating of raw or not thoroughly boiled *pork*.

The disease caused by the propagation of trichines in man has been called

Trichinosis,

Which commences, as a rule, with disturbances of the digestive apparatus, sometimes a few hours, at other times not before several days after the infecting meal, with variable symptoms, such as: uneasiness, fulness, nausea, retching, vomiting, diarrhœa, or constipation. In most cases there is an unpleasant and pasty taste in the mouth, and in many a loathsome, putrid odor. The *muscular* symptoms are the most important and painful. A constant symptom from the outset is a flabby condition of the muscles and painful sensation on motion, a muscular lameness. After the invasion of the muscles the symptoms may be trifling, even absent in light, and extremely violent in moderate and severe cases. Commencing seldom later than on the tenth day, they consist of various degrees of swelling and hardness and extreme sensitiveness to pressure of the muscles in general, or a permanent contraction of the flexors of the extremities, or a difficulty of chewing and swallowing in a degree that only fluid nourishment can be taken, or a hoarseness when the muscles of the larynx, and a difficulty of breathing when the diaphragm and the respiratory muscles are invaded. The fever in light cases is insignificant, in severe forms resembles that of an ordinary case of typhoid fever, or presents in lighter cases almost an intermittent type. There is seldom a chill at the onset, oftener slight shivering. The pulse varies at the beginning between 80 and 90, and rises later to 100 or 120 beats in a minute. The temperature may rise to 105° F. Perspiration is usually very profuse, and continues throughout the whole disease. The *nervous* symptoms consist especially of sleeplessness, neuralgic attacks

in the bowels, hyperæsthesia of the skin in the form of pruritus or formication, either extending over the whole body or limited to single portions of the lower extremities, and in some cases of loss of hearing. The *circulatory* symptoms consist of œdematous swelling of the eyelids and face, which is the most characteristic sign of trichinosis, setting in most frequently on the seventh day, and at times disappearing after from two to five days, and reappearing again in some cases after a few weeks. Œdema of the extremities is often quite marked and lasting.

The *incubation* varies from a few hours to several weeks, and it appears that some persons can tolerate a considerable number of trichines without experiencing any special disturbance. The muscle-trichinæ must have attained a certain maturity in order to be capable of sustaining themselves in the stomach and of developing and reaching the muscles, their ultimate abode. If transplanted too young into the stomach, they will be either destroyed by digestion, or will have to make up their deficiency in the intestine and require therefore a longer time for the development of embryos. Also, if the capsulated trichinæ are much calcified, it will take a longer time to set them free. Just such uncertainty exists as to the duration of the disease itself. In some very light cases the whole course of trichinosis passes over in two or three weeks without even confining the patient to bed; while in somewhat severer cases convalescence begins in the fifth or sixth week, and grave cases take some four months and even then the convalescents frequently do not regain their full strength for a long time. A fatal termination occurs most frequently in the fourth, fifth or sixth week, and generally as a consequence of paralysis of the respiratory organs. The percentage of deaths has been as high as thirty in a hundred.

The Diagnosis in single cases is very difficult in the beginning of the disease, easier when several persons become diseased at the same time. The onset resembles closely a gastro-intestinal catarrh, from which it differs, however, by a constantly increasing perspiration.

The œdema of the face and eyelids, appearing on the seventh day, is another important feature, in as much as other diseases in which this symptom occurs (morbus Brightii, diseases of the heart, lungs or pleura) can easily be excluded. The urine in trichinosis is always free from albumen. But the diagnosis becomes indisputable on the discovery of single trichinæ in the

stools, or upon the observation of muscle-trichinæ in excised portions of muscle, or also in the proven fact that the patient has partaken of trichinous pork.

THERAPEUTIC HINTS.—The best prophylaxis is not to eat any pork, ham, sausages, etc., which is not well boiled or roasted. The old school has ordered laxatives, turpentine, kali picronitricum and benzine, but without any marked effect.

Dr. Hering has recommended the **Tellurite of Potassa** in half grain doses. For in accordance with the provings of Hansen and Möhler, this substance caused at once such a strong, garlic-like odor of the breath, that the prover had to withdraw from society for several weeks. This odor is owing to a volatile organic compound, or perhaps telluretted hydrogen, into which the tellurite of potassa is converted, and may by its pervading the whole system, be likely the means of destroying the intruders.

There are a few cases on record which have been treated homœopathically by **Apis, Arsen.**, etc., but likewise without any striking effect. Although I never have seen a case of trichinosis, yet, considering the totality of the symptoms of trichinosis, I feel strongly inclined to recommend **Ledum palustre.** For in the first place this herb has been used successfully to keep insects away from clothing. Secondly, it has been given successfully for insect stings and wounds caused by needles, and what can the wandering trichines be better compared with than millions of finest needles piercing the muscles? And lastly, *Ledum* has the following symptoms which correspond to trichinosis: *Bloated face;* want of appetite; nausea; constipation; *violent tension in the hypochondriac region during inspiration* and retention of breath; *oppressed painful breathing;* pain and drawing in the outer parts of the chest, especially during inspiration, accompanied with single stitches. *Painful stiffness of the muscles; sensation as if the muscles had not their proper length, with pain as if sprained in every position, but especially when touching the parts and when walking.*

Swelling, with tension and stinging hardness of the whole leg. Swelling of the leg extending to beyond the calves, with tensive pains; swelling of the feet; inflammatory or œdematous swelling of the feet and legs. *Pain in the soles of the feet when walking, as if ecchymosed.* Pressure in the soles of the feet, more violent during a walk. Bruised pain in the heel when walking. *The limbs of the whole body are painful, as if bruised and contused.* Chilliness.

Languor and weariness when sitting, standing or walking; fainting. Pimples and boils, pustules on the forehead and other parts. Œdematous swelling, also of the skin of the whole body.

SPECIAL HINTS TO HELMINTHIASIS.—Acon., pain in the bowels; the umbilical region is hard and the whole belly bloated; urging to stool without discharge, or slime only; nausea; accumulation of water in the mouth; or restlessness at night on account of intolerable itching and tingling at the anus, throwing the child into fever (seat-worms).

Arg. nitr., periodical pain in the region of the liver and around the navel, with sickness at the stomach, retching, vomiting of tough mucus; menses irregular, but always discharge of thick, black, coagulated blood; gray-yellowish color of the face.

Bellad., drowsiness; starting in sleep, grating of teeth, involuntary discharge of feces and urine, or dysuria; squinting.

Calc. carb., headache, dark rings around the eyes; pale, bloated face; thirst; thick, bloated belly; aching about the navel; diarrhœa; easy perspiration from motion; scrofulous diathesis.

China, pain in the belly worse at night, after eating; fulness of the abdomen, pyrosis, pressure in the stomach and retching; tremulous weakness all over.

Cicuta, frequent hiccough and crying; pain in the nape of the neck; spasmodic drawing of the head backwards, and tremor of the hands.

Cina, restless sleep with rolling of the eyes, dark rings around the eyes; squinting; enlarged pupils; constant rubbing the nose; bleeding of the nose; face pale, cold or red and hot; loathing of food, or great hunger; nausea; vomiting; pain in the umbilical region; belly hard and distended; constipation; dry, hacking cough at night; feverishness; convulsive motions of head and limbs.

Euphorbia, loss of appetite, or voraciousness at times; furred tongue, feverishness; fetid breath; bloated stomach; constipation or diarrhœa; emaciation, peevishness, wakefulness.

Ferrum, pale, wretched complexion, easily flushing; itching at the anus from seat-worms at night; involuntary micturition.

Filix mas, frequent pain in the bowels, a kind of gnawing and boring; constipation; loss of appetite; furred tongue; pale face; blue rings around the eyes; itching of the nose; irritable and cross.

Ignat., itching at the anus from seat-worms; convulsions, with loss of consciousness and temporary inability to speak afterwards.

Kousso, indigestion; loathing; sleeplessness; weakness with fainting; profuse and cold perspiration; emaciation; dull pain in the bowels; bloatedness; constipation, tape-worm and other worms.

Lycop., arthritic pain and stiffness; chronic eruptions; wretched, dirty, pale, earthy complexion; flatulence, bloating the stomach and abdomen; sensation of something crawling and moving in the bowels and stomach up and down; constipation.

Mercur., continuous greediness for eating; he becomes weaker and weaker withal; bad smell from the mouth; itching of the anus; inflammation of the vulva; seat and round-worms.

Punica granatum, vertigo, wavering before the eyes, enlarged pupils; yellow complexion; grating of teeth; accumulation of water in the mouth; changing appetite; gulping of watery fluid; vomiting; sensation of something moving in the stomach; bloated bowels; colic; palpitation of the heart; spasms; syncope.

Sabad., vomiting of round-worms, or nausea and retching, with a sensation of a worm in the pharynx; or, in case of tape-worm, burning, boring and whirling in the umbilical region; accumulation of water in the mouth; chilliness and sensitiveness to cold; sensation as if the abdomen were sunken in.

Spigel., nausea every morning before breakfast, always better after breakfast; dilated pupils; squinting; pale face; smarting in the nose; sensation of a worm rising in the throat, better after eating; or vomiting of all she takes, with sour rising like vinegar from the stomach; pain in the bowels; dry, hard cough at night; palpitation of the heart.

Silic., colic in children from worms.

Sulphur, after Acon. or Mercur.; creeping in the nose; creeping and biting in the rectum; passage of lumbricoides, ascarides and tænia; nausea before meals and faintness before dinner; restlessness at night.

Stannum, Hahnemann and others have mentioned it as palliating the symptoms caused by tape and round-worm.

Tereb., burning and tingling in anus and rectum, lessened by applying cold water; hunger after a square meal; foul breath; choking sensation; dry, hacking cough; spasms and convulsions; wakeful at night; screaming as if frightened; staring look, clenching of fingers; twitching of different parts of the body.

Teucrium is said to be specific against the terrible itching in the anus from thread-worm.

In addition the following remedies may be merely mentioned as vermifuges: Apocyn. andr., Asclep. syr. and tuber., Chelone, Dolich. pruriens, Gelsem., Gnaphal., Helon., Podoph.

Peritonitis.

Its pathological character is like that of pleuritis or pericarditis—injection of the capillary vessels followed by exudation. This exudation is either—

1st. *Of a serous nature*, and then generally profuse, distending the abdomen to a considerable extent. Owing to its serosity it is easily absorbed. Or the exudation is—

2d. *Of a fibrous nature, coagulable lymph*, at least predominantly so. This is apt to cause adhesion, not only between the layers of the peritoneum at different places, (thus forming sacs wherein the remaining fluid is retained) but it may create, also, strings or bands of fibrin, which fasten one portion of the intestine to another, and which may give rise to strangulation of a portion of the intestines. Or the exudation is—

3d. *More or less mixed with blood-globules*, called *hæmorrhagic*, mostly found in diseases which predispose to bleeding in different organs, as for instance scurvy, typhus, delirium tremens, exanthematic fevers, etc. Or the exudation consists

4th. Of *pus* or *ichor*, when it is called *purulent* or *ichorous*. The latter takes place only under the most unfavorable conditions, a generally depraved state of the blood, as in puerperal fevers, pyæmia, or when urine passes into the cavity of the abdomen.

It is thus clear that a peritonitis is not necessarily cured simply because the inflammation has passed away; its product, the exudation, may yet give considerable trouble before it is removed.

Peritonitis does not always involve the whole peritoneum, is not always *general* or *diffused*, but much oftener only *partial* or *circumscribed*, attacking only single portions, for instance those which cover the liver, spleen, kidneys, uterus or some parts of the intestines, being more or less complicated with inflammations of these organs.

Its CAUSES are various. *Primarily*, it is most frequently brought on by external injuries: a blow, a fall, a penetrating wound, or by surgical operations, or by exposure to cold and wet.

Secondarily, it may be a mere continuation of an already existing inflammatory process of the liver, spleen, womb, bladder, cæcum, etc., or it may arise in consequence of ulcerative processes within the intestines and subsequent perforations; also childbed-fever and menstruation are frequent causes of peritonitis.

Symptoms.—Owing to these diverse causes peritonitis, considered as a general form of disease, exhibits a great variety of manifestations which will change in individual cases. Indeed this is so with all forms of diseases. I can point out only those symptoms which are most apt to occur in all forms.

1st. *Pain* is never absent and always severe; it is described as sharp and lancinating, and is increased by the slightest motion or touch. Therefore the patient lies quietly on his back, with his thighs flexed, breathing only with the thorax, instinctively avoiding all action of the diaphragm. The slightest pressure increases the pain; even that of the bed-clothes seems at times unbearable—a distinctive sign between peritonitis and colic.

2d. *Vomiting;* at first, of the usual contents of the stomach, then of slimy and bilious, and lastly of green masses, as though verdigris had been taken into the stomach. It becomes stercoraceous only when peritonitis is associated with obstruction of the bowels. The vomiting never relieves, but increases the pain considerably.

3d. *Singultus* sets in especially when the serous covering of the diaphragm becomes involved in the inflammatory process.

4th. *Constipation*—owing to the paralyzed state of the intestines—is a frequent symptom; but in cases of peritonitis puerperalis, or in combination with catarrhal inflammation, or ulceration within the intestines, there is almost always diarrhœa.

5th. *Great distention of the abdomen* in consequence of accumulation of gas and fluid. This causes the diaphragm to rise into the thoracic cavity and to compress the lungs, producing congestion, short breathing, 40 to 60 times in a minute, and a disturbance of the circulation which may bring on cyanosis of the face.

6th. *Constant desire to urinate; painful micturition or retention of urine;* always where the serous covering of the bladder is involved.

7th. *Fever;* more or less intense according to the extension of the inflammation. The temperature may rise to 104 or 105° F., and higher, and the pulse from 120 to 130 in a minute. Gradually, however, as the disease progresses, the pulse becomes small and flickering; the extremities cool, and covered with cold sweats; the features collapse.

8th. *Physical signs* are not very readily elicited, as the patient can bear neither touch nor motion; although, of course, we may expect a dull sound on percussion where there is effusion, and a tympanitic sound where there is meteorism. Auscultation gives no signs, except rumbling in the bowels, which may be heard a yard off.

That it is a dangerous disease we may conclude, if we consider for one moment its nature, and again, that this danger varies according to the cause, complication and extension of the disease. Simple cases, produced by bruises, taking cold, without other complications, are the least dangerous. Those caused by wounds are more or less dangerous, according to the nature of the wound. And the danger of those which are the secondary result from other inflammatory processes depends upon the nature of these processes.

It is a good sign when, in the progress of the disease, the pain gradually abates and the pulse rallies. It is a bad sign when the pain abates and the pulse gets weaker and quicker. It is a sign of imminent danger when the pain suddenly subsides and the pulse becomes flickering and the features collapse.

Cases which have become chronic terminate frequently in marasmus and a variety of consecutive sufferings. It is possible that in such cases the purulent exudation perforates either some part of the intestine, or discharges outside through the abdominal wall.

THERAPEUTIC HINTS.—Acon., hot, dry skin; quick, hard, small pulse; high, inflammatory fever; mouth and tongue dry; great thirst; bitter taste; vomiting; no stool; urine scanty, red and hot; lower extremities cool; short, quick breathing; very restless; anxious expression in the face; burning, cutting, darting pain in the bowels, worse from slightest pressure, motion and lying on the right side; abdomen hot to the touch. After taking cold, drinking cold water when being heated.

Apis, burning, stinging pain in the bowels, very sore to the touch; when exudation has taken place; urine scanty, dark; œdematous swelling of the feet; burning, stinging in the region of the ovaries; metritis.

Arnica, after contusion.

Arsen., later, when there is a sudden sinking of strength, cold, clammy perspiration, anxious, internal restlessness, insatiable

thirst with drinking but little at a time; constant vomiting; burning in the bowels; all worse in the middle of the night.

Bellad., after Acon., great congestion to the head; strongly pulsating carotid arteries; light and noise unbearable; colicky pains in the bowels; painful retching and vomiting, worse from motion and contact; great anxiety and dyspnœa. Especially when in complication with metritis or perityphlitis.

Bryon., stitching pain or pressing, lancinating in the bowels, worse from slightest motion; when exudation has taken place; tongue white and dry; great thirst; bowels constipated; the patient lies perfectly still, don't want to move. Especially in complication with diaphragmitis.

Calc. carb., when about the seventh day a red rash appears; also when the pain is alleviated by cold water applications, so that the patient wants them renewed constantly. Abdominal tuberculosis.

Canthar., abdomen burning hot; tympanitic distention in its upper region; lower portion yields a dull sound; bloody, slimy stools; painful, extorting cries; tenesmus of the bladder; strangury; great anguish and restlessness; distressed face; sunken features; cold extremities. Especially when the serous covering of the bladder is the seat of inflammation.

Carb. veg., excessive tympanitis with paralysis of the bowels.

Laches., abdomen hot and sensitive to touch; painful stiffness from the loins down into the thighs; scanty, turbid urine with reddish sediment; strangury; constipation; necessity of lying on the back with drawn-up knees. Especially in complication with typhlitis.

Lycop., in complication with diaphragmitis or hepatitis; when lying on the left side, a feeling as if a hard body were rolling from the navel to that side; or when after three or four days the face assumes a yellowish color; troublesome flatulence and constipation; sleeplessness and constant loathing.

Mercur., at a later period, if the exuded fluid becomes purulent, with frequent starts; creeping chills; perspiration without relief; pale, wretched complexion; foul smell from the mouth; vomiting of slime and slimy stools, with straining; œdematous swelling of the feet; great weakness and emaciation. Especially when in complication with typhlitis and the formation of abscesses.

Nitrum, stitching and sticking pains; predominating coldness of the lower extremities; kind of numb and stiff feeling in the affected parts, as if they were made of wood.

Nux vom., belching, vomiting and constant pressure upon the rectum, as if urging to stool.

Opium, distention of the abdomen; anxiety, with a feeling of flying heat internally, and stupefaction of the head; somnolence; antiperistaltic motion of the intestines; constant vomiting and belching; retention of stool and urine; complete inactivity of the lower bowels.

Rhus tox., great restlessness; changing position, notwithstanding the pain it causes; tongue red at the tip; pressive, cutting pain in the abdomen; typhoid symptoms; febris lenta; metritis.

Sulphur, after Acon. and Bryon., or when the disease takes a protracted course.

Veratr., vomiting and diarrhœa; coolness of the skin; sunken features; pulse small and weak; thirst great; restlessness and anxiety.

Ascites, Dropsy of the Peritoneum.

Its pathological character is like that of hydrothorax, a collection of fluid within the peritoneal sac, which is of a yellow, or yellowish-green, or (if blood be mixed with it) of a reddish color, and contains a great deal of albumen, saline constituents, and flakes of coagulated lymph. The quantity of fluid sometimes exceeds forty pounds. The peritoneum is opaque, without lustre, and thickened, but without any signs of inflammation. Liver and spleen are pale, sometimes smaller than normal; the kidneys appear anæmic, and the diaphragm is pushed upwards into the thoracic cavity.

Dropsy of the belly is never a primary disease, but always the consequence of some morbid action, such as diseases of the lungs, heart, larynx, blood-vessels, liver, spleen, kidneys, of intermittent fever and cancer-cachexia.

It may result from mere local troubles, such as impediments of circulation within the peritoneum by obstructions of the vena portæ, cirrhosis, and tumors of the liver, tubercular and carcinomatous degeneration of the peritoneum. Frequently several of these causes are in operation, and sometimes it may be difficult to find out the true cause. If it develops without any œdema of other parts, we may conclude that it is caused either by an obstruction of the portal circulation, or by a degeneration of the peritoneum. If by disturbance of the portal circulation, we gen-

erally find signs of disturbed action of the liver, and the urine containing bilious coloring matter; if by degeneration of the peritoneum, there are signs of cancer-cachexia, or tumors in the abdomen, the urine usually retaining its natural color.

SYMPTOMS.—1. *Swelling of the abdomen.* This alters its form according to the position of the patient. When standing, the hypogastric region swells out the most; when lying, the most dependent portion of the abdomen bulges out. This distinguishes ascites from any other swelling within the abdominal cavity.

2. *Fluctuation*, which is easily discovered by palpation.

3. *Diminution of urinary secretion and alvine evacuations* (the latter excepted, where there is an intestinal catarrh co-existing).

4. *Dull percussion sound*, also variable according to the patient's position.

5. *Pressure towards the thoracic cavity*, with dyspnœa and palpitation of the heart.

6. Enlargement of the veins in the lower extremities, and dropsical swelling of the external genital organs and lower extremities, in consequence of the pressure which the accumulation of fluid within the abdominal cavity exercises upon the vena cava and venæ illiacæ, causing obstruction of circulation in these parts.

The PROGNOSIS depends entirely upon the nature of its cause. If that is not removable, it is hardly to be expected that its consequences will be. The patient does not die in consequence of dropsy, but in consequence of the primary disease, if that be fatal, although dropsy by impeding the respiration, or by excoriations or superficial gangrene may hasten this result.

Ascites differs from dropsy of the ovaries by its *causes*, which close examination must elicit; by its *form*, being a uniform distention of the lower abdomen, rising gradually upwards. In dropsy of the ovaries, the swelling is more on the one or the other side, extending gradually sideways over the whole abdomen; by its *changing form* by change of position, which never occurs in dropsy of the ovaries, where the fluid is encysted.

In our THERAPEUTIC management of each individual case, therefore, we shall have to select remedies from those which are indicated for dropsical affections in general; as Apis, Arsen., Bryon., China, Dulcam., Ledum, Lycop., Phosphor., Pulsat., Rhus tox., Sepia, Strontian.

Vomiting and diarrhœa suggests Ant. crud., Tart. emet., Apis, Argent., Arsen., Asar., Borax, Chamom., Cuprum, Ipec., Mercur., Phosphor., Senega, Sulphur, Veratr.

Ulcers on the legs, Arsen., Graphit., Helleb., Lycop., Mercur., Rhus tox., Scilla, Sulphur.

Œdema of the lower limbs, with constant oozing out of the water from sore places without formation of pus, Rhus tox., afterwards Lycop.

Cough, with dropsy, Amm. carb., Apis, Arsen., Colchic., Helleb., Nitr. ac.

SPECIAL HINTS.—**Apis**, urine scanty, dark, like coffee-grounds; thirstlessness; great soreness of the abdominal walls; stinging, burning pains in different parts of the body; can't get breath, except when sitting; even leaning backwards causes suffocating feeling; in complication with scarlet fever, uterine tumors, and inflammatory processes of the bowels.

Apoc. cann., has been given abundantly by western physicians for "dropsy" of all kinds; seems to be indicated by a sinking feeling at the pit of the stomach; an irritable condition of the stomach, that cannot retain even a draught of water; muddy urine; diarrhœa; bloatedness of the face after lying down, passing off after sitting up; dropsy after scarlatina.

Arsen., complexion pale and earthy, or greenish; great weakness, exhaustion; faint feeling from slight motion; tongue dry; great thirst, with frequent drinking, but only little at a time; suffocative spells, especially at night; great anxiety; must jump out of bed; skin cool; burning heat inside; post-scarlatinal dropsy; in complication with heart diseases.

Aurum, has been recommended when ascites is the consequence of functional disturbance of abdominal organs, in combination with albuminuria.

Bryon., congestion of the head; giddiness when rising after stooping; loss of breath when moving in the least; lower eyelids œdematously swollen; lips bluish; great thirst and scanty urine, with burning in the urethra, passing off drop by drop; obstinate constipation; after scarlet fever.

Canthar., cured many cases according to Faivre.

China, indicated in organic disturbances of liver and spleen, and after loss of blood.

Colchic., palpitation of heart, and dyspnœa from 11 to 3 o'clock

in the night, burning in pit of stomach, afterwards nausea, finally vomiting with subsequent weakness and sometimes ravenous hunger. Skin dry and pale. (F. Pollock.) Urine scanty, looking like bits of decompsed blood, with offensive smell. (W. McGeorge.)

Convulvulus arv., constipation; abdominal disturbances, weakness, appetite good; he would eat more if there were more room, the abdomen being filled with water; urine almost entirely suppressed.

Digit., difficult micturition; pale face; intermitting pulse; cold skin; doughy swelling, which easily yields to the pressure of the finger.

Fluor. ac., enlarged and indurated liver, in consequence of drinking whiskey.

Graphit., great œdema of lower extremities with profuse watery exudation below knees; exudation gelatinous. (H. V. Miller.)

Helleb., in acute cases; after scarlet fever; drowsiness; slow in answering questions; griping in bowels, with jelly-like discharges; frequent but scanty micturition; great thirst; fever; sympathetic neuralgia of face into teeth on left side; preventing chewing.

Kali carb., in complication with liver and heart affections.

Laches., in complication with liver, heart and spleen diseases, scarlet fever; *black*, scanty urine.

Lycop., liver affections; abuse of alcoholic drinks; after venesection, or intermittent fever; oozing out of water from sore places in the lower extremities, without formation of pus; urine scanty, with red sediment; upper portion of the body emaciated, lower enormously swollen; one foot cold, the other hot; restless sleep; cross when getting awake.

Mangan. ox., intermittent fever; cachexia; palpitation of the heart, strong, irregular, tumbling, without abnormal sounds.

Mercur., in consequence of organic lesions of the liver and other abdominal viscera; the swelling of the abdomen is tense, hard; thirst not prominent.

Senec., abdomen very tense; lower extremities œdematous; urine scanty and high-colored, or alternating with profuse and watery discharge; pain in the lumbar region and in the ovaries.

Sulphur, after suppressed itch, rough skin; bluish spots; sleep, with moaning; quick pulse; cold feet; easily sweating, especially in the face; painless diarrhœa; drawing together of the fingers; very forgetful; inclination to sit still and to lie down.

Paracentesis with the usual trocar causes adynamia, rapid return of the fluid and often peritonitis.

Capillary punction allows a slow withdrawal of the fluid, causes less adynamia and less frequently peritonitis. (Leudet.)

Tympanites Abdominalis

Corresponds to *Pneumothorax*, and consists of a collection of gas within the peritoneal sac. It is caused by ruptures or perforations of the stomach or of the intestines, in consequence of which the gas which is contained therein diffuses itself within the peritoneal sac. More rarely the air finds its way into the abdominal cavity from out of the lungs (in consequence of abscesses and pneumothorax); and still more rarely it enters from the uterus or the vagina in consequence of destructive processes in these organs. Cases have been observed where the gas originates within the peritoneal sac itself, in consequence of a decomposition of ichorous fluids contained therein, especially in combination with puerperal peritonitis.

Symptoms.—*Swelling of the abdomen.* Its development is rapid if it be caused by perforation; slower, if by gradual decomposition.

Full tympanitic sound all over, even in the region of the liver. This organ is pressed backwards, if it be not adherent to the diaphragm; this is quite characteristic and serves to distinguish tympanitis from meteorism, *i. e.* a collection of gas within the intestines.

All signs of peritonitis, which develops itself soon after the entrance of air into the peritoneal sac.

THERAPEUTIC HINTS.—Compare Peritonitis and those other affections of which it is a mere consequence.

DISEASES OF THE LIVER.

Physical examination.—The upper part of the liver extends into the space between the fifth and fourth, sometimes even to the edge of the fourth rib. Being, however, overlapped here by the lower edge of the right lung, which reaches down to the sixth rib, we find on percussion the perfect, dull liver-sound commencing only from the sixth rib, while above it to the fourth rib the

dull sound can be elicited only by hard strokes, sounding through the layer of the lung tissue that covers the liver. Inferiorly the liver reaches to the tenth rib in the right hypochondrium, whence it ascends in a somewhat semi-lunar line across the epigastrium, midway (or often a little higher than midway) between the ensiform cartilage and the navel, towards the left hypochondrium. Percussion in a horizontal line from the ensiform cartilage towards the left, a little under the region where the apex of the heart strikes, tells us how far into the left hypochondrium the left lobe of the liver reaches.

This normal position, however, may be changed without indicating any disease of the liver itself. The liver is dislocated *downwards* by emphysema, pleuritic effusions, pneumo-, pyo- or hydrothorax of the right lung; it is dislocated *upwards* by fluid or gaseous collections, or tumors within the abdominal cavity, or in consequence of a shrinking of the right lung. Its surface becomes *grooved* by tight lacing of corsets and waists of petticoats in females, and of pantaloons in males. Part of the right lobe may, by this long-continued process, be brought down to the anterior superior spinous process.

Pigment Liver, Melanæmic Liver resulting from Malarial Fevers.

The liver presents a steel-gray or blackish, or chocolate color, in consequence of an accumulation of pigment matter in its vascular apparatus. These deposits are either uniformly distributed, or limited only to certain portions. Similar appearances are constantly found also in the spleen, frequently in the capillaries of the lungs, also in the brain, especially in its cortical substance, and in the kidneys. Even the other organs and tissues, such as the external integument, the mucous membranes, the muscular tissue, etc., remain by no means exempt, as may be seen by their gray tint. The pigment seems to be carried everywhere by the blood, and the effects upon the system of this morbid process in consequence of malarial fevers will, of course, vary according to the organs which are most specially attacked. We will find cases with predominant *brain symptoms*, others with predominant symptoms of the *kidneys*, others with predominant derangements of the *gastro-intestinal tract* and *the liver*, and others where *anæmia*

and *hydrhæmia*, resulting from affections of the *spleen*, constitute the most important morbid conditions.

Hyperæmia, Congestion of the Liver.

One of the most frequent causes is obstruction to the circulation of blood in consequence of valvular diseases of the heart, such as constriction of the left auriculo-ventricular opening, insufficiency of the mitral and still more of the tricuspid valves, and further, affections of the lungs, such as emphysema, extensive induration or atelectasis, great pleuritic effusions, etc., which all give rise to accumulations of blood in the venæ cavæ, by which the branches of the hepatic vein continue permanently distended, and cause a general enlargement of the liver. On section, the organ presents a nutmeg-like appearance. The dark spots correspond to the situations of the hepatic veins, and the light-colored portions of the parenchyma, exhibiting upon closer inspection pale, delicate ramifications, correspond to branches of the portal vein, and constitute the so-called **Nutmeg liver.** From the persistence of this obstruction the hepatic parenchyma gradually atrophies and at last acquires a finely-granular structure, which frequently has been confounded with cirrhosis of the liver. This is the *atrophic form of nutmeg liver.* Besides the symptoms of the cardiac or pulmonary disease, which constitutes the primary cause of the circulatory obstruction, we observe derangements of digestion, pains and tension in the epigastrium, nausea, etc., and occasionally hæmorrhoids. Sooner or later it leads to death from pulmonary œdema, apoplexy, general dropsy, etc.

Congestion of the liver may be induced also by rich living, especially in persons of a sedentary habit. Stimulants and irritants, such as alcoholic drinks, pepper, mustard, coffee, etc., in large quantities frequently give rise to this trouble, and quite marked is the influence of hot climates and of miasmatic effluvia. The hepatic hyperæmias of the tropics are often associated with dysentery or malarious fevers. In the latter case there is also swelling of the spleen or kidneys.

Its *acute form* is characterized by more or less painful distention of the region of the liver, with dyspnœa and pain stretching towards the right shoulder, by headache, nausea and vomiting of mucus or green matter; by constipation or diarrhœa, which is bilious or even bloody. This state of things, by proper treatment,

may entirely subside; if neglected it may give rise to a *chronic form* which shows more or less periodical exacerbations of these symptoms, and finally runs into structural changes of the liver, such as softening, or pale and jaundiced or fatty degeneration, or induration, cirrhosis and abscesses.

In temperate climates this affection is much less violent than in the tropics, but may also assume a chronic form and produce enlargement of the liver by fatty deposits, or infiltration of its parenchyma with albuminous substance, which gradually passes into colloid degeneration, and in rare cases becomes cirrhosed.

A hyperæmia of the liver in consequence of the suppression of habitual hæmorrhages, for instance during the climacteric period of life, has frequently been observed; it usually does not give rise to any serious derangement in the nutrition of the liver.

THERAPEUTIC HINTS.—*In acute cases:*

Bellad., high fever; congestion of the head; severe headache; vomiting of a watery, slimy and bilious fluid; great thirst; region of the liver painful and sore to the touch.

Bryon., bilious vomiting; bitter taste; white tongue; great thirst or only dryness in the mouth; inclination to keep still; soreness of the liver to pressure; costiveness.

Card. mar., when constipation frequently alternates with diarrhœa.

Chamom., after anger or chagrin; very annoying pressure in the region of the liver; colicky pains in the bowels; vomiting of bile; feverish restlessness; crossness; icteric color of the face.

China, pale, wretched complexion; diarrhœa, worse at night or after eating; sensitiveness to external cold; great weakness and lassitude; after severe illness, loss of vital fluids, or abuse of mercury.

Ignat., after grief or fright, especially in the female sex; menstruation profuse and irregular; leucorrhœa, with bearing-down pain.

Mercur., bad taste; bad smell from the mouth; tongue white, flabby, showing the imprints of the teeth; feverishness; sweating without relief.

Nux vom., fulness; pressure; stitches in the liver, worse from motion or contact; swelling of the liver; yellow color of the face, especially if the color of the face is florid with a yellowish tinge; all worse in the morning; great irritability and hypochondriac mood; costiveness.

In chronic cases: **Calc. carb., Carb. veg., Graphit., Lycop., Magn. mur., Natr. mur., Natr. sulph., Sepia, Sulphur.**

Compare also the diseases of the heart and lungs, of which congestion of the liver is more or less a consecutive symptom; also the chapters on acute and chronic catarrh of the stomach and intestines. Besides all this, the following require special study—

Laches., cannot bear tight clothes around the waist; has even to loosen the night-jacket to relieve the oppression, which is occasioned even by laying the arm on the body; tension; contractive tightness in the region of the liver.

Lauroc., distention of the region of the liver, with pain as from subcutaneous ulceration, or as if an abscess would burst; earthy complexion; yellowish spots in the face.

Lycop., tension around the hypochondria as from a hoop; sore aching in the region of the liver, as if caused by a shock, worse from contact.

Nux mosch., feeling of heaviness in the region of the liver; swollen liver; bloody stools.

Podoph., fulness, with pain or soreness in the right hypochondrium; chronic hepatitis, with costiveness; the patient is constantly rubbing and stroking the region of the liver with his hands.

Peri-Hepatitis, Inflammation of the Capsule of the Liver and of Glisson's Capsule.

It may be part of a general peritonitis, or the consequence of an abscess of the liver, of simple, or cirrhotic induration, of cancer, or of echinococci in the liver; it is at times the result of external violence, or a mere extension of an inflammatory process of some neighboring organs, such as right pleurisy, and simple and cancerous inflammation of the stomach.

Its most characteristic symptom is, tenderness of the hepatic region on pressure, motion and deep inspiration, without any change in the volume or situation of the liver. In itself it is not a dangerous disease, but may produce thickening of Glisson's capsules and of the portal vein. Its treatment compare under peritonitis and the diseases of which it may be the consequence.

Hepatitis vera circumscripta seu Suppurativa.

This is an inflammation of the hepatic tissue limited to one or several isolated patches, without implicating the remaining portions of the gland to any great extent. In their centre, these inflamed spots are soft and yellowish, at their periphery they show hyperæmia, swelling and softening of the liver tissue. In the progress of the disease little pus globules form in the middle of the inflamed spot, they increase in number, unite and form a small abscess, which again unites with other small abscesses, and thus, in the course of time, the greater part of the liver may become an irregular cavity filled with pus.

Such abscesses are found in the posterior portion of the right lobe. When they reach the surface of the liver, they break through and discharge their contents into the abdominal cavity; or, if the surface of the liver has formed adhesions, in consequence of previous inflammation, with neighboring organs—either with the abdominal walls, the diaphragm, the stomach, the gall-bladder, or a part of the intestines—it perforates these organs, and discharges itself either through the abdominal walls, or into the thoracic cavity, stomach, gall-bladder, or intestines, according to its situation and adhesion.

Hepatitis is primarily a very rare disease, and is mostly brought on by external injuries—a fall, a blow, a wound, etc.

Secondarily it is caused by the irritation of hardened concrements within the gall-ducts, or by ulcerative processes within the stomach and the intestines, which perforate and spread upon the surface of the liver. In tropical climates it has most frequently been found in connection with dysentery. Pyæmia, in consequence of wounds on the head or on any other part of the body, is also a cause of it.

Symptoms.—A *primary* hepatitis caused by a blow, fall, or other mechanical injury occasions pain in the right hypochondrium; frequently very acute, as its lining portion of the peritoneum is likewise inflamed; it is worse from any motion. There is also pain in the right shoulder, and on tension, in the right straight abdominal muscles. The liver is swollen; the skin more or less yellowish discolored (icterus); fevers alternate with rigors.

A *secondary* hepatitis, in the course of ulcerative processes in the stomach and intestines, manifests itself by shaking chills, pain in the liver, swelling of the liver and icterus, though the latter is not always present.

Hepatitis in consequence of pyæmia manifests itself likewise in swelling of the liver, icterus and shaking chills. Formation of abscesses on the convex portion of the liver often bulge out, and may be detected by palpation. Those on its concave side compress the portal vein, and cause swelling of the spleen and ascites.

Small abscesses may pass over without any marked symptoms. Large abscesses cause fever, shaking chills, wasting away, cachectic appearance.

Perforation through the abdominal walls, after previous adhesion of the inflamed portion of the liver with the abdominal parietes, is the most favorable, as, in this case, the pus is discharged outside.

Perforation into the pleural sac causes pleuritis; a perforation into one of the larger bronchi causes the pus to be expectorated; a perforation into the pericardial sac causes pericarditis, which is fatal. If the perforation takes place into the stomach, it is thrown up; and if into the intestines, it is discharged through the bowels. A discharge into the abdominal cavity produces fatal peritonitis.

All this shows that hepatitis and its consequences must cause quite a variety of symptoms; that its prognosis generally is unfavorable; and lastly, that a successful treatment, without a close study of the individual case, is quite impossible. Still, I may mention the following remedies, which have proved themselves more or less beneficial in abscesses of the liver: Bellad., Bryon., Laches., Nux vom., Pulsat., Ruta, Sepia, Silic., Kali carb., Merc. sol., Hepar, China.

SPECIAL HINTS.—Compare what has been said under the head of Peritonitis.

Arnica, in traumatic cases.

Arsen., painful bloatedness in the right hypochondrium, with violent burning pain; violent thirst; vomiting of black masses; black stools; burning heat of the skin; anxiety and restlessness; very quick pulse; perforation into the stomach or intestines.

Bellad., especially with acute pain in the region of the liver, worse from pressure, breathing, coughing and lying upon the right side, extending upwards towards the shoulder and neck; congestion of the head; getting dark before the eyes; fainting and giddiness; bloatedness of the pit of the stomach; tension across the epigastrium; agonizing tossing about; sleeplessness or wanting to sleep, with inability to go to sleep.

Bryon., burning and stitching pain, worse from motion and contact; after chagrin or anger; fulness of stomach and abdomen; pain in the right shoulder; yellowish face; white tongue; great thirst; constipation.

Chelid., crampy pain in the inner angle of the right shoulder-blade; shooting pain from the liver into the back; pressive pain in the back part of the head, towards the left ear; pressure in the eyeballs; bitter taste in the mouth; nausea; palpitation of the heart, with very quick and irregular pulsation and without abnormal sounds; constipation.

China, pain as from subcutaneous ulceration, worse from touch; liver swollen; diarrhœa; distended veins on the face and head.

Hepar, when suppuration takes place.

Kali carb., pain through to the back; abscess; dryness of the skin.

Laches., after Bellad. or Mercur., very sensitive to any pressure upon the hypochondriac region; much flatulence; palpitation of the heart; formation of abscesses.

Leptand., yellow-coated tongue; constant nausea and vomiting; aching in the region of the liver; dark-brownish urine; black stools.

Lycop., in slow cases; complication with pneumonia; fan-like motion of the nostrils when breathing; one foot hot, the other cold.

Mercur., pressive pain and stitches in the liver; inability to lie on the right side; when coughing or sneezing a stitch-pain through middle of the chest from front to back; yellowish tinge of the face; perspiration without improvement; during fever feels chilly when changing the feet to a cooler place in the bed.

Nux vom., pain, stitch-like, or throbbing, or pressive, worse from external pressure; sour or bitter taste in the mouth; nausea; vomiting; shortness of breath; the dress seems oppressive; the removal of it, however, does not relieve; great deal of headache. Previous use of allopathic medicines, coffee, liquor, etc.; sedentary habits.

Phosph. ac., pyæmic symptoms.

Pulsat., spells of great anxiety at night; green, slimy diarrhœa; thirstlessness.

Silic., hardness and distention of the region of the liver; throbbing, ulcerative pain, increased by contact and motion; formation of abscesses.

Sulphur, especially after Nux vom. and Mercur.; red tip of tongue; red lips; sleeplessness.

Cirrhosis, Hob-nail Liver, Interstitial Inflammation of the Liver, Granulated Liver, Gin-drinkers' Liver.

It is a chronic inflammation of the areolar tissue, which, being of a fibrous texture, forms a capsule over the entire liver, enters as Glisson's capsule into the interior of the gland and accompanies the vessels, nerves and bile-ducts to their finest ramifications. The next consequence of inflammatory action of this tissue is exudation of coagulable lymph, which forms new areolar tissue and adhesions between its ramifications, causing the secreting cells of the liver to become isolated and compressed, and producing in this way larger or smaller granulations, which have been compared to hob-nails. In the further progress, the new formation compresses also the biliary ducts and blood-vessels, and the whole organ shrinks, becomes hard, tough, pale, anæmic, and, if cut, appears gray-yellowish, wherefore the name cirrhosis. Its most frequent CAUSE is the abuse of *alcoholic drinks;* still it has been observed in individuals who were not addicted to drinking, and where it seemed to be in connection with syphilis, intermittent fever, suppressed menstruation, poor living.

Heart diseases, according to Bamberger and others, do not cause it. It is much more frequently found in males than females, rarely in children, and most frequently in persons over thirty years.

SYMPTOMS.—1. The liver is, during the stage of exudation, considerably enlarged, and, during the stage of granulation, loses quite considerably in bulk, so that the left lobe disappears entirely. If we have an opportunity to observe its progress long enough, we can witness this increase and gradual decrease of the liver, and in this way gain one of the most important aids in our diagnosis.

2. *Enlargement of the spleen* is met in many, not all cases, in consequence of the obstructed circulation of blood within the portal vein and its branches, which impairs the free reflux of blood through the vena lienalis. This is an early symptom.

3. *Ascites* appears later, but is a more constant accompaniment of granular induration, and depends upon the same obstruction of the portal circulation; still later *œdema* of the lower extremities occurs.

4. *Meteorismus*, if strongly developed, causes difficulty in breathing.

5. *Dilatation of the abdominal veins*, caput medusæ, appears not until an advanced stage of the disease. It is caused by the obstructed portal circulation. The blood in its way from below, being stopped, forces its way through neighboring veins, widening and dilating them, and thus forms a collateral circuit around the liver, until it reaches the vena cava. These widened and dilated veins appear sometimes like a large net-work over the walls of the whole abdomen, and even above it.

6. *Functional disturbances of the intestinal canal* are of a varied nature. The appetite is, in some cases, not altered till very late; in others, again, want of appetite, nausea, belching of wind and vomiting predominate. The bowels are either constipated or diarrhœic. In severe cases we find vomiting of blood and bloody stools.

7. *Loss of flesh and strength sets in quite early*, as a necessary consequence of imperfect circulation.

8. *Jaundice* is, according to Bamberger, a prominent symptom of cirrhosis, other authors have not found it so frequent. It depends upon catarrh of the bile ducts, or upon compression of the hepatic duct, or upon constriction of the minute biliary ducts by the newly-formed connective tissue.

If we consider these symptoms, together with the preceding abuse of spirituous liquors, we shall be enabled, in most cases, to make out a sure diagnosis. But for the sake of DIFFERENTIAL DIAGNOSIS I shall compare a few forms of disease which might be confounded with it.

Stricture of the biliary duct is usually caused by gall-stones, and has its peculiar colicky spells, but no swelling of the spleen.

Nutmeg liver is always the consequence of heart and lung diseases, and has no enlargement of the spleen.

Cancer and tuberculosis of the peritoneum, with highly-developed ascites, may be sometimes difficult to discern; still we have here a quicker wasting away; perhaps also signs of cancer or tubercles in other organs, and a development of œdema of the lower limbs prior to the development of ascites; whilst in cirrhosis we have first ascites and afterwards œdematous swelling of the lower extremities.

Cancer of the liver distinguishes itself by the peculiarly potato-shaped surface of the enlarged liver and the normal size of the spleen.

Hydatids of the liver give, on palpation, the sense of fluctuation; they do not impair the general nutrition, nor do they cause an enlargement of the spleen.

Inflammation of the portal vein, with coagula forming in it, is a much more rapid process, and is not caused by previous abuse of spirituous liquors.

Inflammation of the areolar tissue surrounding the biliary ducts is characterized by the highest degree of icterus and the complete discoloration of the stools.

Colloid or fatty infiltration of the liver never decreases in size, causes no icterus, and is found in scrofulous, rhachitic, or syphilitic individuals, or as consequence of mercurial poisoning.

PROGNOSIS is favorable as long as the disease is still in its first stage. After granulation has formed throughout the organ, I do not believe that its parenchyma can be reorganized.

THERAPEUTIC HINTS.—If the disease is brought on mainly by the abuse of spirituous liquors, especially whiskey and brandy, the first prescription, of course, must be, "stop drinking." And, in order to destroy the appetite for alcoholic stimulants, our second prescription should be, "drink milk," and nothing but milk; live on milk-diet. After this we shall have a choice between these remedies, which are antidotes to alcohol: Nux vom., Bryon., Pulsat., Carb. veg., Sulphur, Arsen., etc.

In its second stage we must be guided entirely by the characteristic symptoms of the individual case, and may choose from the following: Arg. nitr., Aurum, Card. mar., Chelid., Cinchona, Conium, Iodium, Laches., Leptand., Lycop., Magn. mur., Mercur., Natr. mur., Nitr. ac., Phosphor., Plumbum, Podoph., Quassia, Selen., Sepia, Tax. bacc.

Syphilitic Inflammation of the Liver

manifests itself either as an *interstitial hepatitis and peri-hepatitis*, which leave white depressions, like cicatrices, consisting of fibrous tissue and extending from the thickened capsule more or less deeply into the interior of the gland, the secreting tissue of which is atrophied, thus producing an irregularly, lobulated form of the liver; or as *hepatitis gummosa*, when the tissue of the cicatrices just described is seen to contain whitish or yellowish nodules, which usually vary in size from a linseed or a bean up to a wal-

nut, and resemble the nodes or gummata of syphilitic patients found in the subcutaneous areolar tissue beneath the peritoneum, in the testicles, etc.

The symptoms during life of syphilitic hepatitis are not at all characteristic. A dull, temporary pain and tenderness in the region of the liver, in rare cases jaundice, also enlargement of the spleen and frequently coexisting albuminuria, may hint to this complaint, especially when other unmistakable signs of the secondary and tertian stage of syphilis are present. Its treatment belongs into the chapter of Syphilis.

Acute Yellow Atrophy

Is a rapid wasting of the liver in all its diameters, but especially in its thickness, sometimes preceded by a preliminary stage. Its capsule appears opaque and puckered; its parenchyma is flabby and shrivelled and of an ochre-yellow or rhubarb-like color; the blood-vessels, the gall-bladder and bile-ducts are empty in most cases, the gall-bladder containing only a small quantity of gray mucus or a turbid, pale-yellow, rarely brown or greenish fluid. The spleen is frequently greatly enlarged and congested and there are considerable extravasations of blood in various organs and tissues. The kidneys, especially in pregnant females, are in a state of fatty degeneration and their tissue flabby and shrivelled. The urine is characterized by the absence of urea, which has accumulated in the blood, and by temporary presence of albumen.

The nature of this disease is still quite obscure; several theories have been advanced, but that which considers the whole process as one of diffuse inflammation is the one most generally accepted.

The Precursory Symptoms usually resemble the symptoms of an acute gastro-enteric catarrh, which sooner or later, sometimes not until after the lapse of several weeks, becomes associated with a slight jaundiced tint of the skin. Even this may exist from eight to fourteen days or longer before the characteristic changes in the liver and spleen, the hæmorrhages and the nervous disturbances become apparent. However, in other cases, these symptoms appear simultaneously with the jaundice, and as soon as they do appear the progress of the disease is rapid and violent, terminating in the worst cases at the end of twelve or twenty-four hours, in other cases after two or five days, latest and in rare cases only,

after a week. The disease sets in with vomiting first of ingesta and mucus, later of blood and ultimately of coffee-ground substances. This is attended with headache, which, as a rule, soon passes into delirium, followed by convulsions and a tremulousness of the muscles of the extremities and trunk. Finally the state of excitement passes into stupor and deep coma; the pupils enlarge, the respiration becomes sighing, intermittent and stertorous. The pulse, at first slow, rises with the nervous symptoms to 120, or keeps at 70 or 80 as long as the patient is dozing and rises to 120 or 130 when the patient is roused. The abdomen is tender, especially in the hepatic region. The extent of the hepatic dulness diminishes as the disease advances, while that of the spleen increases at the same time. The bowels are almost always confined; the stools are dry and clay-like, later they become dark-colored and tarry from the presence of blood. There appear, as the jaundice increases, numerous extravasations of blood in the skin in the form of petechiæ and ecchymoses, and hæmorrhages from the nose, the vagina, the stomach and bowels, and the bronchi.

The urine is brown and contains bile-pigment, at times small quantities of albumen. Its deposit, upon exposure to cold, is greenish-yellow, which differs greatly from all other kinds of deposits. The disease is most frequently observed in the female sex, and then especially during pregnancy. Further are mentioned as exciting causes: mental emotions, venereal excesses, syphilis, miasmatic influences and typhus.

THERAPEUTIC HINTS.—**Acon.**, acute, feverish icterus, especially during pregnancy.

Bellad., congestion to the head; headache; dizziness; sopor; pupils at first contracted, and afterwards dilated; spasmodic jerkings; grating of teeth, etc.

Bryon., chill first and fever afterwards; typhoid symptoms; bitter vomiting; constipation.

Crot. horr., yellow color over the whole body; convulsions with trembling of the limbs; hæmorrhages from all the orifices of the body.

Ipec., vomiting of blood, and bloody discharges from the bowels.

Leptand., delirium; complete prostration; heat and dryness of the skin; coldness of the extremities; fetid and tarry stools; tongue thickly coated, with a black streak down the centre.

Phosphor., ought to be compared.

Compare also Hæmorrhage from the Stomach and Bowels, and Jaundice.

Hepar Adiposum, Fatty Liver.

A fatty infiltration of the liver cells is found very frequently on post-mortem examinations without ever having shown its presence during life by any signs of diseased action of that organ. A diet of fatty substances, or of large quantities of food containing an abundance of carbo-hydrogens, produces such infiltration, which, however, disappears again when the food is changed. This accounts for the frequent occurrence of fatty liver in individuals who have died suddenly in the bloom of good health. For this kind of infiltration there is no known line of demarcation between health and disease, inasmuch as the liver-cells are not altered by it in their character, the fat being merely deposited therein. Altogether different is the fatty liver as found in connection with pulmonary tuberculosis, drunkard's dyscrasia, chronic dysentery, cancer and other wasting diseases. Here the liver cells cease entirely to perform their function, their nutrition becomes impaired; it is indeed a fatty degeneration of the liver-cells. Its production is not fully explained, except by the broad statement that it is owing to abnormal conditions of the metamorphosis of matter. But whether it be mere infiltration or degeneration, the blood is always loaded with fat and the sebaceous glands of the skin secrete abundantly, causing a greasy or velvety character of the cutis.

The Symptoms of fatty liver are not very well marked. Still, as a considerable accummulation of fat in the liver must impede the flow of blood through the portal vein, and the excretion of bile, we find fatty liver naturally associated with chronic congestion of the gastro-intestinal mucous membrane, which may be exaggerated by slight causes into catarrhs, derangements of digestion, diarrhœa, and hæmorrhoids; and with stools more or less deficient in bile; but an intensely jaundiced color of the skin is never produced by it and seldom a high degree of ascites. The liver is at first enlarged but gradually becomes reduced to even below its normal size; its outer surface is smooth. The general appearance of the patient gradually assumes the characters of general cachexia, and there is usually an enlargement of the spleen attending it.

Its TREATMENT will in the case of infiltration consist of a strict regulation of diet and habit, and in the case of degeneration will fall entirely under the treatment of those diseases with which it is associated.

Colloid Liver, Lardaceous Liver, Waxy Liver, Amyloid Degeneration of the Liver.

This is a degeneration of the liver cells into a waxy, translucent mass, so that by degrees the parenchyma of the gland presents a uniform, smooth, yellowish-red, somewhat glistening surface, interrupted only by the patent orifices of the blood-vessels pouring out a little thin blood. This morbid change may occur sometimes only in isolated places, but is most frequently distributed more or less marked throughout the entire organ. The nature of this substance is thus far still unknown. From the blue color produced by a solution of Iodine in conjunction with Sulphuric acid, Virchow supposed it to be an "amyloid" body, but the proof from elementary analysis is still wanting.

Waxy degeneration is often found combined with fatty deposit in the liver, especially in cases of pulmonary tubercle, with cirrhotic induration, with syphilitic cicatrices and fibroid nodules (gummata), with simple atrophy of the liver. It is scarcely ever restricted to the liver, but is almost invariably found also in the kidneys and spleen, and often likewise in the lymphatic glands and the mucous membrane of the gastro-intestinal canal. Moreover we can usually, at the same time, discover the remains of chronic diseases of the bones, the indications of constitutional syphilis, tubercle or cancer, etc.

The injurious effects of this degeneration upon the elaboration of blood and nutrition causes, as a rule, a pale, cachectic appearance of the patient and symptoms of anæmia and hydræmia. The symptoms vary, however, according to the cause which has excited the morbid process and the direction in which it extends; they differ naturally in cases where the kidneys and the mucous membrane of the intestines are attacked at an early stage, and in other cases where the spleen and lymphatic glands are chiefly implicated.

The liver is in most cases enlarged, at times very greatly, at others not at all, and in still others it is even reduced in size. There is usually an abnormal tenderness in the hepatic region,

or a mere feeling of fulness; in rare cases of the syphilitic form an acute pain consequent upon an attack of peri-hepatitis. Jaundice and ascites are found only exceptionally. The spleen is commonly enlarged to a considerable size, though not always, and the derangement of the gastro-intestinal canal manifests itself frequently by loss of appetite, vomiting, with a clean tongue, diarrhœa with alternation of pale and dark stools. The same degeneration of the kidneys manifests itself in the majority of cases by enlargement and albuminuria.

Mild cases, based upon chronic diseases of the bones, hint to: **Calc. carb., Lycop., Silic., Sulphur.**

Syphilitic cases require; **Iodium, Kali hydr.** and the different **Mercurial preparations.** Other cases will resist all treatment according to the base upon which they grow.

Carcinoma Hepatis, Cancer of the Liver.

There are three different forms of cancer of the liver:

1. *The carcinoma fasciculatum*, a rare form, characterized by the pale, yellowish-red color, its glassy, transparent mass, which is enveloped in a bag of fibrous tissue.

2. *The alveolar cancer*, the rarest of all, which is characterized by its jelly-like substance, developing within the areolar tissue around the ramifications of the portal vein.

3. *The medullary or encephaloid cancer*, the most common form, is characterized by its marrow-like substance, which is mostly of a whitish color; sometimes it is red from hæmorrhagic effusion, and, at other times, dark, even black, from a deposition of pigment. The liver appears uneven from nodules of various sizes, which, for the most part, feel hard to the touch, although, in some cases, the sense of touch may detect fluctuation. They increase more or less rapidly in size, and sometimes undergo changes of fatty degeneration, or, in still rarer cases, of softening and decay, or formation of ichor.

We do not know any cause for this malignant disease. It is found sometimes as a primary affection of the liver, but more frequently it accompanies cancerous deposits in other organs. Its most frequent occurrence and its most rapid development have been observed after extirpation of cancerous growths from other organs, especially from the mammæ. Persons between the ages of fifty and sixty are most liable to its invasion.

Symptoms.—1. *Enlargement and uneven surface of the liver.* Its size is sometimes enormous, reaching far over into the left hypochondrium and far down into the abdomen; in fact, no other disease except that of colloid liver causes such extensive enlargement of this organ. Its enormous size makes the right hypochondriac region bulge out, and its uneven surface is then easily detected by inspection and palpation.

In such prominent cases there is no difficulty in the diagnosis. But there are cases where the cancerous nodules lie out of reach of palpation, either deep in the substance of the liver, or on its opposite surface. So is also the enlargement of the liver at the beginning of the disease very inconsiderable, and, in cases of few and small cancerous deposits, attended with general anæmia and marasmus, the liver may appear even smaller.

2. *Tenderness in the region of the liver* is almost always manifest, at least on deep pressure, but it varies much in degree. A radiating pain towards the spine and the right shoulder-blade, as in other liver complaints, may be present.

3. *Icterus* is present only when the situation of the tumors implicate the biliary ducts or when the cancer is associated with catarrh of the ducts. If once developed it never disappears. The skin generally presents a peculiar ash-colored, dirty-yellowish hue, and, being dry and brittle, peels off in minute scales.

4. *Ascites* results in those cases where the morbid mass is sufficiently large, and so situated that it impedes the portal circulation, by pressure upon its vessels, or it comes and grows with general dropsy, or it is due to chronic peritonitis, extending from the liver over the peritoneum.

5. *Disturbed nutrition and gastric symptoms* are almost always present, but show nothing characteristic of this complaint.

6. The *spleen* is very rarely enlarged.

7. *Fever* is, as a rule, quite slight, amounting at the most to febrile motions. Where we find high fever, it is occasioned by some other complication.

8. *Hæmorrhages* in the later stages we find in the interior of the tumor, and from this into the abdominal cavity, also from the stomach and intestines, from the mouth, nostrils and vagina, and in the form of petechiæ and ecchymoses upon the skin, similar to those of purpura and scurvy.

The Diagnosis of cancer of the liver is by no means always easy. Where the characteristic enlargement and uneven surface

of the liver has not yet been developed, (in the incipient state of the disease) or where it does not develop sufficiently to be recognized, we will have to balance the following points:

1. *Can it be colloid liver?* No; because it is not the result of syphilitic or mercurial cachexia, nor is it attended by enlargement of the spleen and albuminuria.

2. *Can it be fatty liver?* No; because it is not the result of tuberculosis or overfeeding.

3. *Can it be syphilitic inflammation of the liver?* No; because there is no constitutional syphilis present.

4. *Can it be cirrhosis?* No; because there is no enlargement of the spleen.

5. *Can it not be nutmeg liver?* No; because there is no heart or lung disease for its foundation. After having thus narrowed the field of possibilities, we now observe, in addition, *swollen jugular glands*, which Virchow considers of great diagnostical importance, we ascertain whether *there is any cancerous formation in any other organ, or a hereditary tendency to it.*

Further, it is among the rarest events, that cancer of the liver coexists with tuberculosis, organic heart diseases, typhus or acute exanthematic fevers; while, on the contrary, it is frequently associated with other cancerous affections, especially within the abdominal cavity. Finally, we consider the age of the patient. Cancer seldom happens before the thirty-fifth year of age; usually between the years of fifty and sixty.

THERAPEUTIC HINTS are rather a scarcity in this complaint. I do not know of a well-attested case, that ever has been made known as cured. The principal remedies promising the best alleviating results are: Arsen., Bellad., Carb. an., Conium, Hydrast., Lycop., Sepia, Silic., and others according to special indications.

Hydatids of the Liver, Echinococcus-cysts.

They consist of a thick, fibrous, white-glistening or yellowish sac of a roundish shape, and of various sizes, attaining even that of a child's head. The sac is lined on its inner surface by a half-transparent, gelatinous bladder, which contains a watery, somewhat turbid fluid, in large quantities, and at the same time a number of smaller cysts, of the same structure, which again con-

tain still smaller cysts, and so on to the fourth generation. Besides this, we observe, within these cysts and adhering to some part of their interior surface, groups of whitish granules, which are the scolices of tænia echinococcus. Under the microscope they appear with heads similar to that of the tænia solium or the common tape-worm; having four sucking cups, in the middle of each of them a nozzle or snout, which is encircled by a double row of hooks. This echinococcus-cyst has been found in any and every part of the liver, sometimes singly, sometimes two, three or more in number. The parenchyma of the liver retains its integrity, and only where it is compressed by the foreign growth, its cells obliterate, and that part of the liver assumes, according to Rokitansky, sometimes a nutmeg-like appearance. The cysts themselves may undergo different changes. Their fluid contents may be converted into a cheesy substance, whereby the inmates perish, or the inner surface of the sac may become inflamed and lead to obliteration of the cyst, or the cyst may burst and pour its contents either into the abdominal cavity, where it almost always causes a fatal peritonitis, or into other organs, with which, by previous inflammation, adhesions have been formed, exactly as in the case of an abscess of the liver. There are cases on record, where echinococcus-cysts, by perforating the diaphragm, emptied their contents into the pleural cavity, from which they were discharged through the bronchial tubes, by means of abscess-formation in the lungs. There are cases also where they were discharged through the abdominal walls, or into the intestines, gall-bladder, or a large blood-vessel. Almost always such perforations are followed by a fatal termination, although, in favorable cases, where, for example, the discharge takes place into the intestines, or through the abdominal walls, the cysts became obliterated and a perfect cure followed.

The echinococcus, when found in the liver, is also frequently found in other organs: the spleen, lungs, kidneys and the omentum.

The essential CAUSE of the formation of hydatids is the swallowing of the ova or embryos of the tænia echinococcus, which pass from the stomach or intestine into the liver and there undergo development. This tænia echinococcus is a small tape-worm belonging to the dog, which explains the fact that hydatids are most frequently found in Iceland, where the dog is an indispensable domestic animal.

SYMPTOMS.—Of all liver diseases this complaint causes the least disturbance in the system, and the occasional symptoms, caused by its pressure upon this or another organ, are of the least diagnostic value. Only when rupture and perforation take place, we observe, as in the case of liver abscesses, a series of violent symptoms, all of which are consequences of inflammation of those organs into which the perforation or rupture takes place.

Our diagnosis is therefore confined to its physical signs alone. These are the following:

1. *A round, smooth, elastic swelling in the region of the liver.*

2. *A sense of fluctuation* on percussing the part in short, abrupt strokes, while the examining fingers of the other hand are held in close neighborhood. What Piorry has called the vibratory sense of hydatids is nothing more nor less than the above-mentioned sense of fluctuation; ascites or ovarian cysts yield it just as clear, under certain conditions even clearer.

DIFFERENTIAL DIAGNOSIS.—*Liver abscess* is attended by fever, pain and great constitutional disturbances.

Distended gall-bladder is preceded by colicky pains, is usually accompanied by jaundice and the swelling corresponds to the normal position of the gall-bladder.

Encysted pleuritic exudation does not alter the place of dull percussion sound on deep inspiration; while the outline of the dulness on percussion lowers considerably by deep inspiration in hydatids.

Catarrhal Inflammation of the Biliary Passages.

Anatomically it is characterized by similar changes as appear in catarrhal inflammation of other mucous membranes. Post-mortem examination reveals the lining membrane to be pale or livid, softened, tumid, and covered with a tenacious, vitreous, or grayish-yellow, purulent secretion, which often produces firm plugs of mucus in the duodenal opening of the ductus choledochus, and a total stoppage to the flow of bile into the intestines. These changes are particularly found in the lower portion of the ductus choledochus and in the gall-bladder, less frequently in the hepatic duct and its roots.

In chronic cases the walls of the ducts become thickened and dilated, either uniformly over long tracts or in the shape of oval sacs. In these pools of stagnant secretion concrements are

sometimes deposited and in rare cases the walls of the ducts ulcerate.

Catarrhal inflammation of the biliary passages is most frequently induced by inflammation of the stomach and intestines, sometimes by hyperæmia and chronic inflammation of the lower, and more rarely, by fatty and waxy degeneration. Its SYMPTOMS correspond, therefore, with the symptoms of those ailments of which it is the result, always associated with the symptoms of more or less intense *jaundice* and *tenderness* in the region of the liver. In a few cases the gall-bladder can be felt as a pear-shaped tumor at the margin of the liver. The jaundice lasts in most cases for some time after the gastric symptoms have disappeared. In cases dependent upon diseases of the hepatic parenchyma, the jaundice is of a fainter tint, and the digestion suffers less, but the symptoms are more apt to return.

THERAPEUTIC HINTS.—Compare catarrh of the stomach and intestine, also jaundice and the other affections of the liver.

In children the following are most frequently indicated: **Chamom.**, or **Merc sol.** Besides compare **Bellad.**, **Bryon.**, **Nux vom.**, etc.

Cholelithiasis, Gall-Stones.

Gall-stones are made up of substances which are all contained in a state of solution in normal bile, with the exception of epithelium and mucus, both being furnished by the mucous membrane of the biliary passages. The principal constituent of gall-stones is *cholesterine*, although it is only sparingly contained in the bile; but in virtue of its insolubility it contributes, as *uric acid* does to the formation of urinary calculi, the main portion to the formation of gall-stones. Other constituents are the *bile-pigments* (cholepyrrhin of a brownish, cholechlorin of a green color) and their *combinations with lime, the biliary acids and their calcareous salts, fatty acids and soaps, mucus and epithelium, uric acid and earths.*

In the biliary passages gall-stones occur in most cases, in numbers from five to ten or thirty, and occasionally even to more than a thousand. All of them which thus occur together, have almost invariably the same characters and composition, in as much as all of them owe their origin and growth to the same morbid process; still exceptionally dissimilar calculi have been found in the same gall-bladder. Their *size* varies from that of a

millet-seed to that of a hen's egg; their *form* is primarily globular, but changes during their subsequent growth in many ways; very large stones usually assume an egg-shaped or cylindrical form, corresponding to the form of the gall-bladder; some stones present a warty or mulberry form, others but rarely found, are flattened, leaf-like concretions with black, metallic glistening surfaces, and still others are the branched varieties which form a cast of the bile-ducts in which they are developed. Their *color* is in most cases brownish or greenish-yellow, but all shades of color are met with, from snow-white to coal-black. Their *specific gravity* is heavier than water, but dried specimens will float on water because they contain air. Their *structure* varies exceedingly. In *simple homogeneous calculi* it is of a uniform texture, and presents an earthy, saponaceous, or crystalline fracture, according to their composition of earthy matter, or of bile-resin and its calcareous compounds, or of pure crystallized cholesterine. In *compound calculi*, we observe a *central portion* or *nucleus*, a *shell* of greater or less thickness surrounding the nucleus, and an *outer crust* covering the shell. The *nucleus* consists either of the compound of cholepyrrhin and lime, or of foreign bodies (a small clot of blood, a worm, a needle, a plum-stone). The *shell* is usually striated, and consists of crystals of cholesterine, or in rarer cases it surrounds the nucleus in concentric laminæ, like the layers of an onion, or it is devoid of all structure, of a soapy or earthy character. The *external crust* is of various thickness; it covers the shell either in a uniform manner, or is thicker on one portion than on the other; it is not unfrequently covered with warty prominences, and its composition and color varies greatly according to the constituents of which it is composed.

In addition to the gall-stones proper, pulverulent or gritty deposits, similar to those which are met with in the urinary passages, are found in the excretory apparatus of the liver.

Not unfrequently gall-stones exhibit indications of commencing disintegration; their angles and edges disappear, and their substance is eaten away by erosions, resembling caries of the teeth, penetrating through several layers, an effect undoubtedly produced by chemical action. Gall-stones may also be destroyed by cleaveage.

Their *mode of origin* is still not fully explained. However, *stagnation and decomposition of bile* seem to constitute the primary cause of the formation of gall-stones. The *stagnation* of bile is

favored by repeated attacks of catarrh of the biliary passages, by cancer of the liver and other hepatic affections, and also by sedentary habits of life. The *decomposition* of bile is dependent upon physiological processes the nature of which has thus far not been revealed. The *tendency* to gall-stones increases with the advance of life; before thirty years of age they are rarely observed. Females are more liable to gall-stones than males.

Gall-stones are found rarely in the hepatic duct and its branches, but most frequently and in largest numbers in the gall-bladder, which they may leave by passing through the cystic duct into the ductus communis and from this into the duodenum; or they may escape by fistulous openings into the stomach or intestine, or externally through the abdominal wall. Through the ductus choledochus all concretions pass which leave the liver, whether they have their origin in the hepatic duct or in the gall-bladder; they, as a rule, obstruct the duct and interrupt the excretion of bile.

Symptoms.—Gall-stones may lie for years in the gall-bladder without giving rise to any symptoms whatever. But if they are washed from the gall-bladder into the cystic duct, they cause, unless they are very small, the most violent symptoms, known under the name of "**Gall-stone colic.**" Usually a few hours after a meal, when the contents of the gall-bladder are poured into the duodenum, or in consequence of lifting a heavy load, or after mental emotions, an excruciating pain, of a boring and burning character, is felt in the right hypochondrium and epigastrium, radiating down to the navel, back to the spine, upwards into the chest, to the shoulder-blades and neck, and even down the arms to the very fingers' ends. The slightest touch increases the pain. It is attended with vomiting, great restlessness, singultus, even convulsions, delirium, syncope and speechlessness. In some cases the attack commences with rigors, often followed by heat and sweating, the temperature rising to between 99.5° and 104.9° F., and the pulse to between 92 and 120. Oftener, however, the pulse is small and of normal frequency, or even slower than normal. **Jaundice** is absent at first, or only slight, and becomes marked only when the calculus fills up the ductus choledochus. The *duration* of hepatic colic varies greatly; it may pass off in a few hours, or last for many days. In the latter case the pain recurs in paroxysms until the duct becomes so far dilated as to permit the calculus to pass. Sometimes the calculus, after enter-

ing the cystic duct, may return into the gall-bladder, when the pain likewise ceases, and in such cases no concretions are found in the stools. But when the calculus remains firmly impacted in the cystic duct, and completely closes up the neck of the gall-bladder, the colicky pains gradually subside, and there only remains a sensation of tightness or pricking, while the gall-bladder, incapacitated of emptying itself, gradually becomes largely distended (**Hydrops cystidis felleæ**), which may terminate at last in a destruction of this organ and consequent fatal peritonitis.

Stones in the ductus choledochus usually excite less pain on account of the greater capacity of this duct, and when entering the ductus communis the pain ceases altogether; but reaching the abdominal opening, the pain returns with renewed severity until the excretions have passed into the intestine. As long as a stone remains in the ductus choledochus, the bile is more or less completely shut off from the bowel, and jaundice makes its appearance, growing the more intense the longer the obstruction lasts.

The DIAGNOSIS is easy, where we find the gall-stones passed off in the stools, or where we can feel them in the gall-bladder. The whole row of symptoms as described above is characteristic. Jaundice, although not a constant symptom, is nevertheless connected with the other symptoms of great diagnostical value.

THERAPEUTIC HINTS.—Bellad., during the colic, is the most important remedy.

Baptis., pain in the region of the gall-bladder, forcing the patient to stir about, although motion is painful.

Berber., has been advised as curing quickly and permanently. (J. Angell.)

Chelid., with pain through under the right shoulder-blade.

China, is indicated by "all the symptoms which arise from obstruction in the gall-bladder; the colic; the periodicity of its recurrence, though the periods of its return are often very unequal and irregular; the yellowness of the skin and conjunctiva; the constipated state of the bowels; the scybalated character of the dark, greenish stools, the scybala varying in size from that of the largest nutmeg to that of sheep-dung, and even smaller than the smallest peas." "I give usually China[6], six pills twice a day, till ten doses are taken; then six pills every other day till ten doses are taken, etc., till at length the dose is taken only once a month."

"I have not failed in a single instance to cure, permanently and radically, every patient with gall-stone colic who has taken the remedy as above directed." (David Thayer.)

Coloc., twisting, boring pain in the stomach, relieved by pressure; rending, tearing pain, extending up to the right mamma; nausea with coldness of the extremities. (R. Arnold.)

Cæsium. (Baruch).

Besides these the following remedies have been recommended: Alum., Apomorph., **Arsen.**, **Calc. carb.**, *gall-stones* triturated (German physicians), Card. mar., (Rademacher), Chionanthus, Evon., Chlorof., Hepar, Laches., Lycop., **Mercur.**, (Porges), Nux mosch., **Nux vom.**, Opium, Osmium, Podoph., Silic., Sulphur, **Tereb.**, (Mossa), Thuja, Ver. alb.

Olive oil is believed to dissolve some kinds of gall-stones, if taken in doses of three to four ounces each night for four nights. (C. D. Fairbank.)

Thrombosis and Occlusion of the Portal Vein; Pylethrombosis; Pylephlebitis Adhæsiva Chronica.

The portal vein derives its venous blood from the stomach, intestines, spleen and pancreas. It is divided into two chief branches for the right and left lobes of the liver in front of the transverse fissure. These two branches are further subdivided till they finally end in the terminals, or the so-called interlobular veins, from which the capillary system of the hepatic lobules originates. From the capillaries of each acinus the blood is carried by the so-called vena centralis lobuli into the hepatic veins, and from the latter into the inferior vena cava. The radicles, trunk, and the hepatic ramifications of the portal vein are all destitute of valves. The blood flows in the portal vein under very slight pressure and with slight rapidity. Stasis of blood in its territory, therefore, occurs very readily, giving rise to ectasia, dilatation, and sinuosity of the vessels, and to coagulation of the blood contained in them. In addition to the slight vis a tergo, inspiration acts as a motive force, accelerating the blood-current in the portal vein, while expiration rather retards it.

From this it may be seen that coagula or thrombi may be developed in the portal vein as well as in other parts of the venous system. Their most frequent CAUSES are local disturbances of the circulation of blood, resulting from granular induration, cir-

rhosis and chronic atrophy of the liver, by which a destruction of numerous capillaries or a constriction of the branches of the portal vein is induced.

Less often the same effect may be produced in consequence of weakened force of the circulation, from diminished action of the heart, or from marasmus, and cases have also been observed where thrombosis of the portal vein was the result from compression of the vessel below the liver by contractile connective tissue, and by tumors of various kinds.

The Symptoms of occlusion of the portal veins are, besides those which are characteristic to the diseases which lead to it: *ascites*, which in a few days attains an extraordinary amount, and which immediately returns after the performance of paracentesis; the superficial veins of the abdominal parietes enlarge and extend in the form of thick cords from the abdomen over the lower part of the thorax towards the axillæ; the spleen increases in size; diarrhœa supervenes, of a watery, or often bloody character, not unfrequently accompanied by vomiting; the urine is scanty and dense; the patients decline rapidly, and present a pale, cachectic appearance. The termination of the disease is, perhaps, without exception, fatal.

Pylephlebitis Suppurativa, Purulent Inflammation of the Portal Vein.

In this affection the thrombus softens from the centre into a dirty grayish-red pulp and afterwards dissolves more or less completely into a purulent fluid. The wall of the vein is thickened, softened, and infiltrated with exudation; its inner coat is discolored, red, brownish, or greenish-yellow, wrinkled, and not unfrequently torn and covered with fibrinous layers, or fluid pus. These alterations may spread to the hepatic branches of the portal vein, and even to its roots.

It may be Produced by a direct lesion of the vascular walls, (*traumatic pylephlebitis*) to which the pylephlebitis of the newborn belongs starting from the umbilicus; or by an inflammatory or ulcerative focus within those organs from which the radicles of the portal vein start; or by suppuration in the vicinity of the cæcum and its vermiform appendix (perityphlitis); or by a purulent or ichorous focus in the spleen; or by purulent deposits between the layers of the mesentery, due to disease of the

lymphatic glands; or by diseased conditions of the liver, the biliary passages, or in Glisson's capsule and the hepatico-duodenal ligament.

Besides the SYMPTOMS which belong to the disorders of which pylephlebitis is the result, its commencement is marked by pains in the epigastrium, the right or left hypochondrium, the cæcal or umbilical region, according as the trunk or one of the radicals of the vein is first diseased. This is soon followed by rigors, heat and profuse sweating, often recurring without any certain type. Liver and spleen, as a rule, increase in size, and the skin and urine become jaundiced. The stools are copious, thin and bilious, only exceptionally constipated. Later symptoms of diffuse peritonitis, painful distention of the abdomen, vomiting, etc., usually supervene; the patients rapidly lose flesh and strength; the fever assumes a hectic character, and ultimately delirium or somnolence is developed and terminates in death. This series of symptoms may run its course in one or two to four or six weeks, oftentimes with several deceitful remissions. If its development could not be prevented its cure will scarcely be possible.

Icterus, Cholæmia, Jaundice.

Jaundice is not a disease, but only a symptom, and consists of a yellow discoloration of the skin by the deposition of the coloring constituents of bile, namely: biliary pigment, biliphæin, cholepyrrhin.

The so-called *liver-spots* (chloasmata, maculæ hepaticæ) have no relation to the diseases of the liver, but are partial deposits of pigment from various causes; and in some cases yellow discoloration is a disease of the skin of the chest, pityriasis versicolor, which consists of vegetable parasites. The yellow discoloration of icterus varies greatly in degree, from a slight and light yellow through all shades to a blackish and greenish-brown color.

It is now conceded on all sides, but still not fully explained by experiments, that jaundice may originate in two different ways. First, by obstruction to the escape of bile from the secreting gland (*hepatogenous cholæmia*), and secondly, by some alteration in the metamorphosis of substances contained in the blood (*hæmatogenous cholæmia*, or *blood icterus*).

1. **Hepatogenous cholæmia** which owes its origin to a mechanical

impediment to the excretion of bile, and its resorption into the blood, is the best understood form of the two. The passage of the bile into the circulation seems, according to recent demonstrations, to take place almost exclusively by way of the thoracic duct, which would afford additional support to the theory, that there is between the secretory cells and the blood-capillaries of the liver, quite an extensive system of channels for the flow of lymph, and obviate at the same time the difficulty of understanding the mode how the bile could be infiltrated into the blood-capillaries which are everywhere separated from the gall-capillaries by the cellular substance of the liver.

The CAUSES, of which stagnation of bile is the result, are very manifold. The *ductus choledochus* and *hepaticus* may become obstructed; by catarrh of their lining mucous membrane, as in icterus catarrhalis; by accumulation of fæcal matter in the large intestines, or a pregnant uterus; by enlargement of the lymphatic glands in the fissure of the liver from lardaceous, tubercular, or cancerous infiltrations; by concretions in their own channel, usually attended with colic; by adhesions of their walls in consequence of exudative processes; by carcinomatous growths from the lining mucous membrane of their walls, or of the pylorus, of the duodenum, of the head of the pancreas, or by tumors in the liver.

The *biliary passages within the liver* may become compressed, or constricted by a large number of morbid alterations of the liver, such as cancer, echinococci, cirrhosis, etc.; by stagnation of blood in the hepatic vein in consequence of organic cardiac diseases, and diseases of the lungs and pleura, in which affections the acceleration or retardation in the respiratory movement of the diaphragm exerts also a great influence, which may be sufficient to cause an obstruction to the flow of bile.

The SYMPTOMS of a stoppage of bile and its accumulation in the blood, manifest themselves in a jaundiced discoloration of the liver, of the serous exudations, and of the secretions, especially those of the kidneys and skin. The *urine* becomes saffron-yellow, reddish-brown, dark brown, greenish-brown, or brownish-black, according to the quantity and quality of the bile-pigment which enters into it. The best reagent is nitric acid which is not altogether free from nitrous acid. By adding the concentrated acid, drop by drop into a small glass containing urine, the well-known play of colors from brown to green, blue, violet and red

will be seen arranged in layers, one above another, like a rainbow. The *sweat*, especially of the axilla, colors the white linen yellow, and so also have the sputa in bilious pneumonia a brown, or usually, a leek-green color. With this tinging of the secretions with pigment goes hand in hand the discoloration of the tissues. The *skin* assumes a pale, sulphur yellow, later a saffron or citron yellow, or an olive or bronzed color, according to the intensity and duration of the disease. This discoloration is seen first on those places where the epidermis is thin, for instance on the nose-wings, the angles of the mouth, the forehead and neck. As the coloring proceeds from the deeper layers of the epidermis, the yellow color of the skin remains until desquamation of the epidermis has been accomplished, which does not take place sometimes till long after the removal of the causes of the jaundice and the disappearance of the coloring-matter from the urine. The *mucous membranes* become only slightly tinged, but the coloring matter penetrates into *all tissues:* the adipose cellular tissue, the serous and fibrous membranes, the areolar tissue, the walls of the blood-vessels and of the lymphatics, and the substance of the bones and of the teeth. The cartilage, brain and nerves are less affected. When the brain appears yellow, the discoloration proceeds from infiltration of the cerebral substance with yellow serum. In the eye the jaundice color extends over all membranes, humors, and especially the vitreous body. In pregnant women even the fœtus participates in the yellow color. The *nervous system* exhibits occasionally the following abnormal conditions: *Itchiness of the skin; derangement of the general sensations*, such as sadness and peevishness of temper, headache, giddiness, great exhaustion and debility; *yellow sight* or xanthopsy, *bitter taste* by clean tongue; *slow pulse*, in most cases 50 or 40 beats in a minute, in some cases still lower; the *temperature* in simple cases remains unchanged.

The symptoms of the *digestive organs*, the most important in a practical sense, is the change in color of the fæces. A total absence of bile makes the stools ash or clay-colored, with a tendency to constipation; a partial want of bile merely makes them paler than usual.

The Duration and Prognosis of jaundice depends principally upon its primary causes.

2. **Hæmatogenous cholæmia, blood-icterus**, seems to be caused by some alteration in the metamorphosis of substances contained in

the blood not fully understood yet; it runs its course independently of any influence exerted by the liver and without any detectable mechanical impediment to the excretion of bile. To this class belong jaundice from the effects of ether, chloroform and Phosphorus, from snake-bites, from pyæmic infection of the blood, from swamp fever, typhus and relapsing fever, and from yellow fever.

Jaundice from violent mental emotions, especially vexation, anger, fright, etc., seems likely to be produced by interruptions to the circulation of blood through the liver in consequence of the influence of the nerves exerted over the calibre of the branches of the portal vein, and by interruptions to the heart's action, the respiratory movements and the renal secretion.

Icterus menstrualis is probably produced by sudden changes in the blood-pressure in the portal vein.

Icterus gravidarum, which makes its appearance in the later months of pregnancy, is produced by the pressure of the distended uterus, or by accumulation of fæcal matter in the colon, upon the biliary ducts, or it is characterized by serious derangements of the nervous system, and, so far as cases of this kind have as yet been examined, depends upon acute atrophy of the liver and diseased kidneys.

Icterus neonatorum appears soon after birth and in ordinary cases seems to be produced by the diminished tension of the capillaries in the hepatic tissue, which takes place upon the stoppage of the influx of blood from the umbilical vein, and which gives rise to an increased transfusion of bile into the blood. A graver form is that in consequence of phlebitis umbilicalis followed by purulent infection. In some cases it may be produced by a catarrh of the duodenum or an accumulation of mucus within the gall-ducts.

Jaundice of new-born children must not be confounded with the slight yellowish discoloration of the skin, which, in most children, is seen a few days after birth and is nothing but a change of color of the hæmatin, which, in consequence of the great hyperæmia of the skin after birth, becomes deposited in the skin. In such cases the yellow color of the white of the eye is absent.

THERAPEUTIC HINTS.—Acon., pain changing about from the stomach to the liver, or to the navel; fever, great thirst; catarrh

of small intestines; constipation or diarrhœa, sometimes in alternation; during pregnancy; in new-born children; after fright.

Arsen., in different liver affections; in consequence of intermittent fevers; heat, restlessness, anxiety, irritable mood alternating with low-spiritedness.

Aurum, pain in the liver and upper part of the abdomen; bowels constipated; stool grayish, ashy; urine scanty, green, brownish; lower extremities, from the knees down to the feet, painful and tired.

Bellad., after the abuse of Peruvian bark or mercury; in complication with stones in the gall-bladder; hardness of the liver; congestion to the head.

Berber., spells of icterus with pale, tough alvine discharges, or profuse, acrid, watery diarrhœa; urine dark, turbid, with copious sediment; morbid hunger alternating with loathing of food, or great thirst alternating with aversion to all kinds of drink; constant, troublesome bloatedness of the abdomen, with occasional forcible and noisy discharge of flatus.

Bryon., stitching pain on pressure in the liver; pressure in the pit of the stomach; pain in the limbs, worse from motion; obstinate constipation; thick, white, coated tongue; nausea; gagging; vomiting after eating and drinking; general malaise; disinclination to move.

Calc. carb., stitches in the liver during or after stooping; cannot bear tight clothing around the waist; enlargement of the liver; habitual constipation; grayish, whitish feces; indigestion; pit of the stomach swollen out like a saucer turned bottom up.

Card. mar., in complication with gall-stones; great sensitiveness of the head to cold; loss of memory and smell; colicky pains in the stomach, with waterbrash; vomiting.

Carb. veg., psoric taint; scorbutic and intermittent fevers; cachexia; irritable, vehement disposition; loathing of meat, butter, fat; constipation, or pale, whitish stools; dark red, bloody-looking urine.

Chamom., after chagrin, imprudent diet, or taking cold; in new-born children.

Chelid., pain in the liver, and in the back under the lower corner of the right shoulder-blade; very irregular pulsations of the heart.

China, gastro-duodenal catarrh, particularly after great loss of animal fluids, or after heavy illness; dulness and muddled condition of the head; oppressive, tearing headache, particularly at night; restless, unrefreshing sleep; yellow coating of the tongue;

dry lips; loss of appetite; loathing of meat; loathing, and yet canine hunger; bitter or sour eructations and taste; gagging; oppression of the stomach and chest, especially after eating; frequent whitish stools; emission of fetid flatulence without relief; great languor, out of humor, and vehement. Gall-stones.

Conium, hard swelling of the liver; glandular swellings elsewhere; the flow of urine stops suddenly, but continues again after a while; cough worse after lying down.

Digit., constant nausea and gagging, with a clear tongue covered with white slime; soreness and bloatedness of the pit of the stomach; soreness and hardness in the region of the liver; stool delayed, chalky; urine scanty, thick, turbid, blackish; pulse full, slow; chilliness and shuddering alternating with heat; tearful, low-spirited.

Fel tauri, violent pain in the bowels with thin stools, which are followed after straining by crumbling masses.

Gelsem., prostration; clay-colored, creamy stools.

Hepar, especially after mercurial poisoning.

Hydrast., gastro-duodenal catarrh; sense of sinking and prostration at the epigastrium, with violent and continued palpitation of the heart.

Ignat., silent melancholy; twitching of one muscle at a time. (Cushing.)

Iodium, dirty, yellowish skin; great emaciation; downcast, irritable mood; yellow, almost dark brown, color of the face; thick coating of the tongue; much thirst; intense canine hunger all the time, with vomiting after eating; white diarrhœic stools alternating with constipation; dark, yellowish-green, corroding urine; after mercurial poisoning; organic lesions of the liver; dyscratic states of the system with hectic fever.

Kali carb., swelling of the liver; stitch-pain in the right side of the chest through to the shoulder; pressive, sprained pain in the liver; can lie only on the right side; complete exhaustion; neither thirst nor appetite; purulent sediment in the urine; abscess of the liver.

Laches., in different liver complaints; during the climacteric age; after intermittent fevers; pain as if something had lodged in the right side, with stinging and sensation as if forming into a lump moving towards the stomach; inability to bear anything tight around the waist, not even the pressure of the night-jacket; pain when coughing as if ulcerated.

Leptand., full, aching pain in the region of the gall-bladder; hot, aching pain in the liver extending to the spine; with chilliness along the spine; clay-colored diarrhœa.

Lycop., chronic liver complaints; after fright; obstinate constipation; incarcerated flatulence; chronic intestinal catarrh.

Magn. mur., chronic hard swelling of the liver, with pressive pain extending to back and stomach; face dirty, dark yellow; tongue dirty, yellowish; bowels distended and hard with pressure and heaviness; stool hard, gray; urine turbid; dyspnœa; palpitation of the heart; œdema of the feet up to the calves of the legs; weak, emaciated; fearful, easily frightened.

Mercur., one of the most frequently indicated remedies, with and without fever; duodenal catarrh, with thickly coated, flabby tongue, showing the imprints of the teeth; bad smell from the mouth; nausea, loathing; vomiting; soreness in the region of the liver; diarrhœa; gall-stones; jaundice of new-born children; after abuse of Peruvian bark.

Myrica cerif., dragging pain in the back; miserable feeling all over; dull pain in the hepatic region; tongue thickly coated of a dirty white or yellowish color; no appetite, loathing of food, strong desire for acids; sleeplessness, unrefreshing sleep.

Nitr. ac., in consequence of chronic derangements of the liver; costiveness; great tearing pain in the rectum, continuing a long time after stool, even more intense after a loose stool.

Nux vom., gastro-duodenal catarrh; after allopathic dosing, overloading the stomach, the use of coffee, liquor, in sedentary habits, after anger. In complication with gall-stones. Headache, dizziness, loss of appetite, bitter taste; nausea, vomiting, gagging; pressure in the stomach, better from belching, soreness of pit, stomach and bowels; unsuccessful urging to stool, constipation. Itching of the skin in the evening; restless sleep; wakes about three or four o'clock in the morning and falls again into a heavy, unrefreshing morning sleep; peevish, irritable.

Phosphor., in complication with pneumonia or deep-seated brain diseases. Atrophy of the liver; during pregnancy, with dry cough and involuntary discharge of urine; constant chilliness, even in a warm room; dejected spirits; aphonia and hoarseness.

Plumbum, nausea in evening or at night, vomiting of food; restless, broken sleep.

Podoph., in complication with gall-stone; then the pain extends from the region of the stomach towards the region of the gall-

bladder, and, when at its height, is mostly attended with excessive nausea; or in complication with inflammatory or hyperæmic states of the liver; then there is a fulness, with pain and soreness, in the right hypochondrium; chronic costiveness or alternate constipation and diarrhœa.

Pulsat., in consequence of chronic susceptibility to hepatitis and derangement of the secretion of bile, with looseness of the bowels; duodenal catarrh; disordered digestion; feverishness and thirstlessness; *after* quinine.

Rheum, in consequence of eating unripe fruit, and accompanied with white diarrhœa.

Sepia, with pain confined to the liver; yellow saddle across the bridge of the nose; brown, yellowish color of the eyelids.

Silic., hardness and swelling of the region of the liver; throbbing, ulcerative pain in the right hypochondrium, increased by contact and walking.

Sulphur, in psoric persons, with or without hardness and swelling of the liver; vomiting of ingesta or blood; pain in the pit of the stomach and right hypochondrium; abdomen bloated; stool constipated; sleeplessness; nightly itching of the skin; hectic fever; red lips.

According to Hartman compare, if icterus be caused by *chagrin* or *anger:* Acon., Bryon., Chamom., China, Ignat., Nux vom., Natr. mur., Sulphur.

By *taking cold in consequence of sudden changes of temperature:* Dulcam., Nux vom., Chamom., Merc. sol.

By *improper food and overloading the stomach:* Pulsat., Ant. crud., Bryon., Carb. veg., Chamom., Natr. carb., Nux vom.

By the *abuse of chamomile tea:* Ignat., Nux vom., Pulsat., China.

By the *abuse of mercury:* China, Hepar, Sulphur, Nitr. ac., Asaf., Iodium, Arsen.

By the *abuse of Peruvian bark:* Pulsat., Arsen., Mercur., Ipec.

If being attended *with much flatulence*, according to Bœninghausen: Carb. veg., Chamom., China, Ignat., Lycop., Nux vom., Plumbum.

DISEASES OF THE SPLEEN.

Physical Examination.—When of normal size—which in an adult is as follows: length, four to five inches; breadth, three to four inches; thickness, one to one and a half inches—the spleen

yields on percussion a dull sound, bounded as follows: posteriorly by the body of the eleventh dorsal vertebra; in front by a vertical line drawn from the anterior border of the axilla to the free end of the eleventh rib; superiorly by the ninth rib; and inferiorly by the free end of the eleventh rib. In order to obtain a clear result by percussion the patient ought to be placed upon his right side. It must likewise be considered whether the stomach be not filled at the time of percussion. In cases of accumulation of fluids in the left thoracic cavity, either pleuritic or pericardial, in accumulation of gas, abdominal or thoracic, in tumors of neighboring organs (liver, omentum, kidney), it may sometimes be next to impossible to define the size and position of the spleen.

A considerably enlarged spleen, however, under ordinary circumstances is easily detected by percussion. And it is sometimes enormously enlarged and displaced, reaching inferiorly to the os pubis, and anteriorly to the median line of the abdomen; in some cases even filling almost the whole abdominal cavity.

In such cases it is also accessible to palpation. Even a moderate enlargement may be felt, if it extend below the eleventh rib. Its surface, except when invaded by cancer, is always smooth; and its form oval and sometimes wedge-shaped. Its rounded apex, and the notch which corresponds to the middle line of the spleen, and which becomes the more marked the larger the spleen grows, are characteristic signs by which to distinguish it from any other abdominal tumor.

Notwithstanding great and laborious experiments, we know as yet but little concerning the functions of this organ. Only so much seems to be certain, that it bears an important relation to the formation of white blood-corpuscles, although we do not know how and in what manner. And this seems to be corroborated by the fact, that diseases of the blood always affect the spleen, altering it in size and consistence and, *vice versa*, that lasting diseases of the spleen lead to a diseased state of the blood, causing anæmia, leucæmia, hydrops, scurvy.

Cases in which such a connection does not seem to exist, prove, perhaps, only that the function of the spleen may, under certain circumstances, be performed by some other organ or organs instead.

Anatomical Peculiarities of the Spleen.

It consists of a much softer and looser texture than any other glandular organ of the body; its areolar framework is made up of the elastic tunic which forms sheaths for the vessels in their ramifications through the organ, which again are loosely connected by small fibrous bands, issuing in all directions from said sheaths. In this way a multitude of interstices is formed, which contain a soft, granular substance. This peculiarly loose construction makes the organ pre-eminently fit for the reception of large quantities of blood; and the more so as its capsule is also of a yielding nature, offering little resistance to extension; so that, on the other hand, if once overdistended, it regains its previous normal state very slowly; and this on account of the inelasticity of its tissue. The veins of the spleen constitute, by their numerous dilatations, the principal part of its bulk; they pour their blood, after uniting with the veins in the stomach, and other less important vessels, into the portal vein.

The whole organ is held loosely in its position by a duplicature of the peritoneum.

The knowledge of these anatomical peculiarities of the spleen at once explains its participation in various abdominal and pectoral affections. All hepatic troubles, and all diseases of the heart and lungs which obstruct the portal circulation, must necessarily retard or prevent the normal egress of blood from the spleen, and cause it to swell; a stagnation of blood in the splenic vein must cause a like stagnation in the veins from the stomach, and thus bring on vomiting of blood, and its loose connection explains at once the possibility of its sinking quite low down into the abdominal cavity under certain circumstances.

Hæmorrhagic Infarction, Splenitis, Lienitis or Inflammation of the Spleen.

Hæmorrhagic infarction is of much more frequent occurrence in this organ than in any other. It consists of a blocking-up of the smaller splenic arteries by fibrinous coagula, which have formed in the left ventricle of the heart in consequence of endocarditis, and which have been washed away by the stream of blood, and carried through the splenic artery into its smaller branches, where they stick fast. This is of such frequent occur-

rence that it is very rare not to find hæmorrhagic infarction in the spleen, in all cases where post-mortem examination reveals valvular destruction to any considerable degree; much more rarely, such emboli come from gangrenous places of the lungs. In such cases they have to pass through the pulmonary veins, the left ventricle, aorta and splenic artery. Hæmorrhagic infarction forms also in consequence of malarial infections, typhus, septicæmia, and acute exanthematic fevers; in these cases, it seems, by a stagnation of circulation within the splenic veins. These hæmorrhagic coagula or thrombi are usually situated at the periphery of the spleen, and are roundish or wedge-shaped, their broad base being nearest to the periphery, while their apices point toward the interior.

They appear at first of darker color and harder than the surrounding tissue, which appears perfectly sound. By-and-by, however, they become discolored and changed into a yellow, firm, homogeneous mass, which during the further progress of the disease may undergo several changes. It may shrink and leave a cicatrix, or suppurate and form abscesses of the spleen, which, if they are many, may transform the whole spleen into a mass of corruption.

These abscesses again may go on to different terminations. They may, by fibrous exudation, become encysted, or they may cause pyæmia, or they may burst and discharge their contents, like abscesses of the liver, into the peritoneal sac; or when adhesions have been formed with neighboring organs, they may, by perforation, discharge their contents into the stomach, colon, or the pleural cavity.

A primary inflammation of the spleen is of very rare occurrence; even external injuries, a blow, a fall, a wound, are apt to cause a rupture, rather than an inflammation.

Its Symptoms are frequently quite obscure and of an uncertain character, so that it is often not recognized until post-mortem examination brings it to light. We have a better chance of discovering its presence when it is produced by cardiac diseases, and there is also an *enlargement of the spleen*, which, however, never reaches more than double its normal size, and in many cases is so insignificant that it cannot be discovered by percussion.

Pain in the region of the spleen originates not in the substance of the spleen itself, but in its enveloping membrane or in the

neighboring organs, and is, therefore, sometimes entirely wanting. When it does exist, it is of a dull character, and is increased by deep inspirations, different movements of the body, and percussion. A sharp pain denotes an inflammation of its peritoneal covering. A radiating pain into the left shoulder is likewise sometimes observed.

Fever is usually entirely or partly dependent on the original disease; but when suppuration has taken place, the characteristic rigors make, as a rule, their appearance.

Peritonitis follows in case of rupture or perforation. On the whole a certain diagnosis can only be made when after traumatic causes or in consequence of pyæmia, endocarditis, etc., local and general symptoms arise which can be referred to the spleen. And the diagnosis increases in probability if metastatic inflammation of other organs are developed at the same time, for instance in the kidneys with albuminuria and hæmaturia.

THERAPEUTIC HINTS.—Compare such remedies as are pointed out under the heads of those diseases which are either the causes or complications of splenitis, as endocarditis, valvular derangements of the heart, etc.

Acute Tumor, or Hyperæmia of the Spleen.

This consists of a more or less copious accumulation of blood within the gland, by which its volume may become enlarged to three or four times its normal size. The color of its tissues varies from red to brown or violet, and in case of a longer duration it changes to a dirty gray or slate color.

This acute swelling of the spleen is an almost constant attendant upon typhus, intermittent, remittent, yellow and puerperal fevers; likewise upon cholera in its stages of reaction, and of a number of other complaints, such as pylephlebitis and cirrhosis, by which a stagnation in the portal circulation causes stagnation of blood in the spleen. We find it likewise attending anomalies of menstruation. It is therefore always of a secondary nature, and *its symptoms* must vary accordingly. Symptoms, which belong exclusively to it, are—

1. The conspicuous enlargement, which can easily be discovered by percussion and palpation.
2. A dull pain in the region of the spleen, which is generally

increased by motion, pressure, deep breathing, and lying on the left side.

3. A conspicuous anæmic appearance of the patient which, especially in intermittent fevers, sets in very quickly and keeps pace with the enlargement of the spleen.

All other symptoms belong to the primary disease which causes it; for therapeutic hints compare these diseases.

Hyperæmia of the spleen leaves with the primary disease; in some cases, however, it assumes a permanent form; and thus originates—

Chronic Tumor, or Hypertrophy of the Spleen.

The spleen sometimes attains a weight of 10, 15 to 20 lbs., filling almost the entire abdominal cavity. Its resistance is often like that of a board, and its substance appears dark brown-red. This is simple hypertrophy, consisting of an increase of granular substances in the intertices, formed by the numerous fibrous bands of the splenic structure. In other forms it has, as a rule, the appearance of waxy or colloid degeneration, and consists indeed of the same homogeneous colloid mass, which the colloid liver presents, and then is called amyloid degeneration of the spleen.

A peculiar variety of this affection is the so-called **Sago-spleen**, where the whole organ appears to be infiltrated with half-solid, transparent, round globules, which can be taken out, and very much resemble boiled sago. It seems that the development of this peculiar appearance depends upon the infiltration of the same colloid mass into the vesicles of *Malpighi*.

The chronic tumor resulting from intermittent fevers is of a slate color.

The CAUSES of this chronic enlargement of the spleen, when it is *simple hypertrophy*, are, *all such disorders as cause a stagnation of blood within the venous circulation*, to wit: heart and lung diseases, inflammation and obliteration of the portal veins, and cirrhosis of the liver; but when it consists of an *amyloid degeneration, a number of diseases, which depend upon a morbid state of the blood*—so-called *dyscrasias*—malaria, constitutional syphilis, mercurial cachexia, rhachitis, scrofulosis, Bright's disease, in a lesser degree, chlorosis, scurvy, and *leukæmia*.

SYMPTOMS.—*Enlargement* of the spleen, usually very great, and characterized by its roundish apex and the notch on its inner

edge. All other symptoms belong more or less to the primary affection, and are therefore of no diagnostic value for the tumor itself.

THERAPEUTIC HINTS must be looked for under the respective heads of causes; however, the following remedies have a special relation to the spleen: Arnica, Asaf., Arsen., Borax, Bromium, Carb. veg., China, Dulcam., Ferrum, Ignat., Laches., Lauroc., Mercur., Mur. ac., Natr. carb., Natr. mur., Nux mosch., Platin., Plumbum, Ran. bulb., Rhus tox., Ruta, Stannum, Sulphur, Zinc.

Spleen affections and *obstinate diarrhœa:* Anac., Asaf., Bryon., China, Dulcam., Ignat., Pulsat., Rhus tox., Sulph. ac.

Cancer of the Spleen

Is a very rare disease; is generally of the medullary or encephaloid form, and sometimes attains a pretty large size; it is always connected with cancer in other organs, especially those of the abdomen.

Its DIAGNOSIS is easy, when the existence of cancer in other organs has been proved, and when the enlarged spleen shows on palpitation that characteristic cancer-unevenness.

Echinococcus-cysts

Are of very rare occurrence; they may exist in the spleen alone, and also in other organs at the same time.

Its DIAGNOSIS is difficult, being possible only under those favorable circumstances in which the echinococcus-cyst is acessible to percussion and palpation, when it may be discovered as a roundish fluctuating tumor.

Rupture of the Spleen

May be caused by external injuries, violent concussions of the body, or by pathological changes of the gland itself, as in its rapid enlargement, especially in typhus, or during the chilly stage in intermittens.

SYMPTOMS.—A sudden very intense pain in the region of the spleen, spreading over the whole abdomen. And in consequence of the internal hæmorrhage: paleness, collapse, cold extremities,

small pulse, vanishing of sight and hearing, syncope, distention of the abdomen, death.

Its DIAGNOSIS must be founded upon the sudden pain in the region of the spleen, and a knowledge of the previous ailments. A perforation of the stomach or of the intestine always causes tympanites by its air rushing into the peritoneal cavity, and peritonitis. The latter is also caused by ruptures of the liver, gall-ducts, and of the bladder; and besides, the pain which is hereby produced is not in the region of the spleen. A fatal termination usually follows, generally within twenty-four hours.

DISEASES OF THE PANCREAS.

The pancreas, the abdominal salivary gland, is situated behind the left lobe of the liver and the stomach, and discharges its secretion by a main duct into the duodenum in the vicinity of the opening of the ductus choledochus into the duodenum. Sometimes the pancreatic and biliary ducts become united just before they enter the duodenum.

Its secretion assists in the *transformation of starch into dextrine* and *sugar*, and in the *digestion of albumen* and *of fat*. It shares its *saccharifying* power with the saliva, perhaps also with the secretion from Brunner's glands, its *peptonizing properties* with the gastric juice and succus entericus, and its power of *emulsifying neutral fats* with the bile; while *its power of breaking up fat into fatty acids* and *glycerine* is the only one which, as far as our knowledge of to-day goes, can be said to be peculiar to the pancreas.

From this statement it may easily be seen why a diagnosis of diseased conditions of this gland is in most cases very difficult and in some altogether impossible. The following symptoms, however, may hint to affections of the pancreas without being pathognomonic: Emaciation of the whole body, beginning early and proceeding to an unusual degree; a flow of saliva-like fluid from the mouth, either as eructations or by frequent spitting; the presence of fat in the stools, sometimes in the urine floating upon it on cooling, like masses of butter; the presence of large quantities of undigested striped muscular fibres in the fæcal discharges; the presence of diabetes mellitus and also chronic jaundice. The pain in the epigastrium is shared by a great number of other disturbances, and even the results of palpation are in many cases negative on account of the deep position of the pan-

creas, and its being covered by the stomach and liver. Occasionally, however, palpation may lead to positive results, when performed with both hands by lateral pressure on the hypochondriac regions, or in the knee-elbow position, when the altered pancreas may be discovered lying crosswise in the epigastric region as a slightly moveable swelling, or as a round, firm, or fluctuating tumor, either smooth or nodular on its surface. Among these symptoms the most important are: fatty stools, melliturıa, darting pains in the epigastrium, (cœliac neuralgia) together with a palpable tumor.

Just as little certainty exists as to the CAUSES of pancreatic diseases. In most cases, as far as we know, these affections are of a secondary nature, arising from diseases of neighboring organs. Fortunately pancreatic diseases are of great rarity.

From among the special forms of morbid conditions of the pancreas as discovered principally on post-mortem examinations, the following may be mentioned:

Pancreatitis, Inflammation of the Pancreas.

Pathologically, it is characterized by swelling, redness, and softening of the areolar tissue, which surrounds the lobules of the gland; in a higher degree it alters the whole gland into a firm mass. It results either in resolution or suppuration, or leads to induration of the areolar tissue and obliteration of the glandular structure. It may be of an acute or chronic nature.

Fatty Disease of the Pancreas

Consists of a fatty degeneration of the gland-cells, analogous to fatty degeneration of other glandular organs, which destroys the secreting cells and causes *atrophy* of the entire organ, of which often nothing remains but a flaccid band of connective tissue.

Cancer of the Pancreas

May be *primary*, originating in the gland, or *secondary*, spreading from neighboring organs to the gland. It causes no characteristic symptoms besides the general cancer-cachexia, and is, therefore, not distinguishable from other coexisting cancerous affections.

DISEASES OF THE KIDNEYS.

The kidneys being the organs for secreting *urine*, any morbid state within them will, no doubt, cause changes in the product of their physiological function, although disease of the kidneys does not attend every abnormal state of the urine. Before we enter upon a consideration of the different renal disturbances, it will be expedient first to collect those symptoms which we may gain by—

Examination of Urine.

1. Its Reaction. Urine is naturally *acid*, which is easily tested by dipping into it blue litmus paper. This acidity varies much even in normal urine; it is increased before meals, decreased after meals; during digestion it is augmented by sulphuric, nitric, phosphoric, tartaric and oxalic acids when taken into the system.

An alkaline reaction may take place sometimes during digestion without being a sign of disease; or it results from taking an excess of fixed alkalies, such as the salts of soda and potassa. In this case the red test-paper is colored blue and retains this blue color when exposed to heat. When it exists as a permanent condition it generally indicates nervous depression, resulting from exhaustion by mental anxiety, spermatorrhœa, etc. It is said to be produced temporarily by the juice of lemons and oranges. An alkaline urine may be caused also by a volatile alkali, such as carbonate of ammonia, in consequence of decomposition. This is generally recognizable by its odor, and the test-paper at once loses the blue color and receives back its original red tint when exposed to a gentle heat. This alkalinity of the urine denotes pathological disturbances, such as the presence of mucus or pus in the urine, in consequence of a disease of the mucous coat of the bladder, or in consequence of paraplegia, whereby the urine is too long retained in the bladder.

2. Its General Appearance. *A light, pale color* is usually found in chlorotic and anæmic states of the system; in neuralgia; in hysteria (*urina spastica*); in diabetes mellitus, with much increased quantity and gravity; in chronic morbus Brightii; in leucæmia; in consequence of wear and tear of the nervous system, with a dash of white in it, containing phosphates.

A deep, dark color may be caused—

1. *By an increase of urea* in the urine, which appears perfectly clear and transparent when freshly voided, and its foam when agitated is perfectly colorless.

2. *By an admixture of blood.* In this case the urine is opaque. It is found: *a*, in hæmorrhages from the kidneys; *b*, in hæmorrhages from the bladder; and *c*, during menstruation or hæmorrhages from the womb, when it is of a mere accidental occurrence.

3. *By an admixture of bile.* In this case the freshly voided urine is usually clear and transparent; its foam, when agitated, is intensely yellow; white paper and linen, when dipped into it, become yellow, even olive-green, and a drop of nitric acid, when permitted to fall on a thin layer of such urine, causes at once an interesting play of colors—commencing with green and blue, passing to violet, red, and finally to yellow or brown. It is found: *a*, in icterus; *b*, in the highest state of pyæmia; *c*, in the acute yellow atrophy of the liver; *d*, in some cases of pneumonia, especially on the right side.

4. *By different drugs*, such as santonin, rhubarb, senna, turpentine, dyer's weed, beets, tar, kreosote, etc.

A turbid appearance of the urine, when freshly voided, may result—

1. *From an admixture of epithelium*, thrust off by catarrhal processes of the mucous linings within the urinary organs. It is of a flocculent appearance and does not alter the specific gravity of the urine.

2. *From gonorrhœal or leucorrhœal discharges*, appearing in the otherwise transparent urine as whitish flakes.

3. *From cylindrical casts* from out of the uriniferous tubuli, during the acute or subacute stages of Bright's disease. They soon settle to the bottom of the vessel, and form a light, downy sediment.

4. *From blood*, as stated above, or *chyle.*

5. *From pus*, which settles as an opaque, creamy or clayey mass; reaction, generally alkaline; it is desolved into a dense gelatinous mass, when agitated with an equal quantity of liquor of potassa, and smells foul and ammoniacal in consequence of decomposition. It is a sign of suppuration somewhere in the genito-urinary system, or a proof that an abscess has opened into and is being discharged through this channel. In chronic catarrh of the bladder pus forms a layer of grayish-white sediment.

6. *From earthy salts*, generally, however, only after cooling. *a. Uric acid* settles in little red granules of a crystalline character, visible to the naked eye, while urates constitute more of a pinkish or yellowish sediment; the urine appears dark, shows an acid reaction, and becomes transparent by the application of heat. When a few drops of nitric acid are added, and the mixture is slowly evaporated nearly to dryness over a lamp, the addition of a drop of ammonia instantly produces a rich purple (Dr. Prout's Purpurate of Ammonia). *b. Phosphates*—a combination of phosphoric acid with soda, lime or magnesia. Such urine always yields an alkaline reaction, is usually of a whitish milky color with whitish sediment of an offensive odor, and clears up at once by the addition of a few drops of acetic acid.

3ª. THE URINE CONTAINS ONE OR THE OTHER OF ITS NORMAL CONSTITUENTS IN EXCESS OR IN DECREASED QUANTITY—(Compare Cl. Mitchell's "Clinical Significance of the Urine and its Normal Constituents)."

Urea, $C H_4 N_2 O$, may be suspected in excess if the urine is of a deep yellow color, of a strong urinous smell, and of high specific gravity, and may be chemically demonstrated as follows: "Pour an equal bulk of nitric acid upon the given specimen, which has not been boiled, and which ought to be part of the entire quantity of urine passed in twenty-four hours." This will produce the formation of crystals of nitrate of urea.

Urea is increased in all fevers (except yellow fever), in acute febrile states with emaciation, in inflammations generally, also those of thoracic viscera often, in nervous diseases, such as epilepsy, chorea, progressive muscular atrophy, in pyæmia, diabetes, atrophy from dyspepsia (in children), and diffuse bronchial catarrh (without fever).

The amount of urea is diminished in paralysis, cholera, yellow fever, albuminuria, acute yellow atrophy of liver, long-continued organic diseases, chlorosis, ovarian tumors and uterine cancer.

Chlorides of sodium (Na Cl) and **Potassium** (K Cl) are soluble, hence do not appear as a deposit in the urine. Sodium chloride is largely in excess of the two. If a sample of urine is evaporated and the residue placed under the microscope, there appear octahedral crystals which can be distinguished from oxalate of calcium by their solubility in water. If *urea* be present instead of octahedral crystals the sodium chloride may assume the form of stars or daggers. Or after filtering a sample of urine, then

boiling and acidulating it with two to three drops of nitric acid, in order to remove the albumen, and adding to this solution, free from albumen, a solution of silver nitrate (strength one to ten), a white precipitate, silver chloride, which is *insoluble* in nitric acid but *soluble* in ammonia, indicates the presence of the chlorides.

The *chlorides* are *increased* in intermittents only during the chill and fever, and in progressive muscular atrophy; they are *decreased* in acute diseases, including especially inflammations with exudations, fevers, cholera, diabetes insipidus (not invariably) and dyspepsia (also not invariably).

The **Phosphates**, as *sodium bi-phosphates* or *sodium phosphate*, and *potassium, calcium and magnesium phosphate.* The *alkaline* phosphates (sodium and potassium) are *soluble*, and therefore not found as a deposit. The *earthy* phosphates are *insoluble* in alkaline liquids, and hence appear as a deposit when the urine is alkaline; the deposit is whitish in color, the urine is of alkaline reaction and of a fetid odor. If some of this whitish deposit is diluted with distilled water, then acidulated with a few drops of nitric acid, and to it is added ammonium molybdate and heat applied, a yellow precipitate indicates the presence of *earthy* phosphates. The *alkaline* phosphates may be detected by the addition of a little ammonium hydrate (ammonia) to the urine and heat applied, which precipitates the *earthy* phosphates. After these are filtered off, and we add to the filtrate ammonium carbonate and magnesium sulphate, we obtain a white flocculent precipitate which consists of *alkaline* phosphates.

The total amount of phosphates may be *increased* in phrenitis, meningitis, mania (acute paroxysms), paralysis following injury to the head, paralysis in general, especially if spinal cord be affected, chorea, apoplexy and epilepsy (after the attack), acute febrile diseases, Bright's diseases and cholera.

The *calcium phosphate* may be especially increased in rhachitis, mollities ossium, extensive burns, nervous exhaustion from severe study and loss of sleep, diabetes (when thirst is satisfied by drinking water), tertiary syphilis, cerebral and spinal tumors, osseous tumors, cancer, caries, meningitis.

The *magnesium phosphate* may be especially increased in meningitis, and in progressive muscular paralysis, while the *ammonio-magnesium phosphate*, the so-called "triple phosphate," is found largely present in the urine in calculus, paralysis of bladder, retention of urine, diseases of the spinal cord. Urine containing

this "triple phosphate" is apt, when passed, to be alkaline, putrid, whitish in color.

The total amount of phosphates may be decreased in functional disturbances of kidneys, as in Bright's disease, in diseases of the digestive organs (food not thoroughly absorbed), in intermittent fever *during the interval*, in chronic diseases of the brain, in mania (exhaustion stage), in acute dementia (least amount when mind most feeble), in pneumonia (when grave), in gout, arthritis deformans, delirium tremens.

We find *magnesium phosphate* lessened in amount in the urine of typhus fever and of grave fevers generally.

The **Sulphates** *of potassium and sodium* are *soluble* in water, hence do not appear as a *deposit*. They are detected by acidulating a small quantity of urine by a few drops of hydrochloric acid, and then adding barium chloride, which causes a precipitate of sulphate of barium, insoluble in nitric acid. Vogel finds but little satisfaction in investigating the clinical import of the sulphates in disease.

The **Urates** *of sodium, potassium and ammonium* are soluble; *acid* urine, however, on cooling may contain them as a *deposit* in which the urate of sodium is generally the most abundant of any. If such deposit disappears again on heating, it consists of urates. If a *heavy*, yellow or pink deposit occurs in acid urine on cooling, place a few grains or crystals of it on a porcelain disk, add a drop of nitric acid, heat gently, add a drop of ammonium hydrate; magnificent red color indicates presence of urates or uric acid. (Uric acid is crystalline under the microscope, but urates are not.)

The amount of urates may be increased in ordinary fevers, pulmonary emphysema, capillary bronchitis, diphtheria, dysentery, influenza, intermittent (febrile stage), nephritis, scarlet fever (*at eruption*), and chiefly *free uric acid* deposit, as in tetanus, acute polyarthritic rheumatism, chronic affections of heart, *liver* and spleen, atrophy from dyspepsia in children, incipience of gravel or of calculus.

The amount of urates may be diminished in yellow fever, remittent fevers, diabetes, albuminuria, cholera, chlorosis, anæmia, hysteria, gout (before the paroxysms), progressive muscular atrophy.

3ᵇ. THE URINE CONTAINS OTHER THAN NORMAL CONSTITUENTS, of which the most important are:

1. **Grape-sugar.**—This substance increases the specific gravity

of the urine up to 1040 and higher; in one case it was changed as high as 1074. To detect it, Trommer's test with caustic potash and sulphate of copper is still considered the best. "If a solution of sugar is treated with a little caustic potash and a few drops of a solution of sulphate of copper, either no precipitate occurs, or that which takes place dissolves again to a beautiful blue fluid. If this mixture be heated the fluid is first colored orange-yellow, soon becomes cloudy, and finally a beautiful red precipitate of cuprous oxide separates." (Neubauer.) "This, then, is what happens when sugar is actually present; when sugar is *absent*, the addition of caustic potash solution causes, perhaps, a cloudiness to appear; then, when the sulphate of copper is added, the beautiful blue color may or may not be present, according to the quantity of copper sulphate added, but when *heat* is applied, there results either (1), a liquid, generally of a color slightly darker than normal urine, containing dirty, white flocks of phosphates, or else (2), a bluish liquid containing these same flocks of phosphates; when there appears *no orange-yellow, which soon becomes cloudy, ending in a beautiful red precipitate, there is no sugar.*" (Clifford Mitchell.)

Or, "if a solution of grape-sugar be warmed with caustic potash, it becomes a beautiful brown-red color; if nitric acid is then added, a piercing, sweetish odor is evolved, which reminds one of caramel or of formic acid." (Neubauer.) "In the case of urine containing sugar then, caustic potash solution added, heat applied, and further nitric acid added, converts the liquid into a substance strongly resembling molasses." (Clifford Mitchell.)

2. **Albumen.**—In general its presence may be looked for if the specific gravity of the urine is persistently below 1015, and it may be detected by heating the urine up to a boiling point which coagulates sero-albumen, if only the urine itself be acid and has been rendered clear by previous filtration. Neutral or alkaline urine must be rendered acid before the operation by addition of nitric acid. Or to avoid all possible chance of confounding albumen with phosphates or urates, fill a test-tube one-third full of a solution of picric acid, and pour one or two drops of the urine, to be examined, into it. If it contain albumen, a cloudiness will at once be seen in the previously clear fluid, which, on the application of heat, balls into a compact mass and rises to the surface.

3. **Chyle.**—"In tropical regions, especially in the Brazils and in

the Southern States of North America, the urine presents, on exceptional occasions, at rare and long intervals of time, an aspect that might easily be mistaken for milk. This appearance depends upon a quantity of fatty matters, stirred up into a fine emulsion, and mixed with the secretion from the kidneys; in fact, the fat is sometimes so abundant as to form a thick cream upon the surface of the fluid. Looked at under the microscope it does not present the form of fat-cells or fat-drops, such as we see in ordinary milk, but appears as a finely granular opacity that pervades the fluid, and is capable of being entirely separated from the urine by treating this with ether. We find invariably associated with it a considerable quantity of albumen, also red and white blood-cells, all characteristic, formed elements of *chyle*. For this reason the affection thus manifesting itself has been termed *chyluria*. The exact nature of it is still unknown." (Bartels.)

4. **Blood.**—Its presence can usually be recognized by its characteristic color which may, however, vary from that of pale, raw meat up to brown-black, in accordance with the quantity present. Bloody urine is oftener sooty or dark colored than bright red, and the liquid is more usually cloudy than clear. Small quantities may be recognized by allowing the urine to stand in a funnel-shaped glass when the blood-corpuscles will sink to the bottom. By means of the microscope the blood-cells can be distinguished in the sediment. Bloody urine is invariably albuminous.

5. **Urinary casts or cylinders**, when found in the urine, always denote an abnormal condition of the kidneys; they are, as a general rule, associated with the excretion of albumen in the kidneys. There are different kinds of cylindrical formations.

a. Epithelial casts consist of simple pipes formed of the epithelia of renal tubes which are shed in their natural continuity in the course of acute inflammation. They are not often seen.

b. Blood casts consist of coagulated fibrine with a large amount of entangled red blood-corpuscles, and are derived from the renal tubules in hæmaturia.

c. Hyaline casts consist of a perfectly homogenous, transparent and colorless mass; their outlines are only with difficulty rendered apparent in the fluid surrounding them, but may be made visible by adding a solution of iodine or iodide of potassium, which colors them yellow, or a weak solution of carmine, which stains them red.

d. Dark granular casts consist of granular masses and are less transparent than the hyaline casts.

e. Waxy casts consist of a homogeneous mass which exbibits under the microscope a peculiar glistening aspect and they often have a distinct yellow staining.

f. Cylindriform casts consist of a homogeneous, colorless and very pale mass; they present under the microscope more the appearance of strips of ribbon, than of real cylinders, and their edges run parallel to each other, their ends are either frayed out or tattered, or pointed at one edge, or folded or twisted up in a spiral. The presence of such casts proves the presence of albuminuria, but does not point out the nature of the cause in producing albuminuria. However the following remarks may assist in the diagnosis of kidney-diseases.

A great number of *pale or dark granular casts* comes from an inflamed kidney. In the *acute* form the pale casts with an abundance of red or white blood-corpuscles,—in the *chronic* form the dark granular casts prevail.

The *waxy casts* always point to chronic and deep-seated renal affection and are never present in recent cases of nephritis, nor in transitory albuminuria. With them are generally found at the same time the other forms in the sediment.

The *dark granular casts* always indicate a notable impairment of the nutrition of the organ, such as chronic nephritis and amyloid disease of the kidneys.

Narrow hyaline colorless casts can appear in any albuminous urine, and they are always found in company with the dark granular and waxy cylinders.

The **Sediments of the urine** may be distinguished in the following manner:

1. *A light, flocculent, cloudy deposit* is commonly *mucus*, entangling epithelial cells or spermatozoës.

2. *A yellow, orange*, or *pinkish deposit*, dissolving by the application of heat (urine acid) is almost always due to *urates*. In very rare cases a dark, citron-yellow color is caused by the great abundance of renal casts.

3. *A dense, abundant, white deposit*, dissolving by the addition of acetic acid (urine alkaline) consists of *phosphates*.

4. *A granular*, or *crystalline deposit* of *reddish color* and small in quantity is uric acid.

5. *A dark, sooty and dingy-red deposit* is *blood*.

The **Quantity of urine** varies, even in health, considerably. It is *increased*, however, in diabetes, chronic diuresis, hysteria, and by drinking large quantities of water or other fluids. *Decrease:* Fevers of all kinds, deep functional disturbances, profuse excretions other ways, such as sweat or diarrhœa; in consequence of heart diseases, liver diseases, dropsy. Its secretion *ceases altogether* in cholera, and in typhus at times.

Its **Specific gravity** is also greatly variable. According to Clifford Mitchell's observations upon fifty analyses of urine, an *increase* in specific gravity simply means an increase of solids. In most febrile conditions, urea, phosphates, sulphates and urates are increased in amount, and with them the specific gravity of the urine. The presence of earthy phosphates may raise it to 1037. When the specific gravity is 1040 or upwards, we are very sure of finding sugar in the urine. When the specific gravity ranges from 1015 to 1030, we need not expect, as a rule, to find either sugar or albumen, although we may find blood or pus. When the specific gravity is persistently below 1015, we are warranted in looking for albumen. The lowest specific gravity has been observed in *diabetes insipidus* and *renal cirrhosis*, varying between 1004 and 1010, and sinking at times to 1002, or even to 1001.

Diabetes, Mellituria, Glycosuria.

This disease is characterized by the presence of sugar in the urine, and although not strictly a kidney disease, it may as well be treated of here as under any other heading, especially as the modes of its development are still under discussion. The most probable modes, as applying to the majority of cases of diabetes, Senator states in the following language: (1) "An abnormally heightened saccharinity of the chyle, or of the blood in the portal vein, or of the two together, in consequence of an impeded conversion of the sugar present in the intestine into lactic acid, or in consequence of accelerated absorption of the sugar; (2) an unnatural acceleration of the portal circulation, whereby, on the one hand, more sugar reaches the liver,—a part of which, without being changed into glycogen, passes on into the circulation; and, on the other hand, the glycogen formed from sugar or other materials passes into sugar more rapidly and in greater quantity and is washed away."

Under the first proposition is taken into account that the saccharinity of the blood may originate in the *intestine* by an abnormally large ingestion of starch or sugar with the food, or by an abnormally heightened transit of sugar from the intestine into the lacteals even without increased ingestion, all of which would explain those symptoms so common in diabetics which point to an implication of the gastro-intestinal canal, and which exist often even before the outbreak of the disease and during its development. Under the second proposition is taken into consideration the theory of Claude Bernard and others that the saccharinity of the urine may originate *a*, in some disturbance of the *nervous system* (Bernard's puncturing the fourth ventricle on the floor of the fossa rhomboidea, immediately above the point of origin of the vagi nerves, or Schiff's section of the optic thalami and the great crura cerebri, or the destruction of the pons Varolii and the middle and posterior crura cerebelli, or the complete division of the spinal cord at the level of the second dorsal vertebra, or in its lumbar portion, or Pavi's section of the medulla oblongata etc.), causing either a dilatation of the blood-vessels by paralyzing the vasomotor nerves, or a specific irritation of the nerves which govern the formation of sugar (both views being hypothetical), or *b*, from the *action of the liver* by which sugar, glycerine, gelatin, and probably albuminates are converted in its cells into glycogen, and that the latter is transformed into grape-sugar by reaction with the blood which bathes the cells, that it then passes into the general circulation, and if its quantity exceeds a certain limit, is finally excreted by the kidneys. These modes of development which we may designate as gastro-enterogenic, the neurogenic and the hepatogenic, do not exclude each other, but may for the most part or altogether occur simultaneously, or the one may proceed and the others may join in.

Post-mortems have shown various morbid changes in the corresponding and other organs, although these changes are by no means constant. In the *brain* tumors, extravasations of blood, softenings and on microscopic examination a wasting of the gray substance, degeneration and striking pigmentation of the ganglion cells and fatty degeneration of the vessels have been found. The *sympathetic nerves* in the abdomen were found thickened and also the vagus. The *lungs* frequently showed signs of chronic inflammations, tuberculosis and pleuritic exudations. The *stomach*

and the *intestinal canal* frequently bore signs of chronic catarrh, hyperæmia, thickening, tumefaction of their mucous membrane, slaty pigmentation and hæmorrhagic erosions. The *liver* has frequently been found hyperæmic, uniformly enlarged and hypertrophied. The *pancreas* has frequently been found atrophied, or, in addition, degenerated; and the *kidneys* appeared, as a rule, abnormally enlarged, heavy, firm and containing an abundance of blood, but without more profound textural changes. The *pelvis of the kidneys* and *the ureters* were frequently found in a state of catarrhal inflammation; and in some cases of young persons the *testes* were found atrophied. Diabetes is not of frequent occurrence, seems to be to a certain extent hereditary, is often connected with diseases of the nervous system, particularly epilepsy and mental affections, occurs at every period of life, but far more rarely in childhood than in middle age; after the age of sixty or sixty-five it scarcely ever *develops;* men are much oftener attacked than women; also obesity seems to predispose to the disease. As Exciting Causes the following have been mentioned: *mechanical injuries*, especially concussions of the whole body or of the brain and spinal cord in particular; *diseases of the nerve-centres*, such as inflammations, degenerations, softenings and tumors of the brain; violent *mental emotions*, such as fright, anxiety, anger, grief, solicitude, care, immoderate mental strain; *errors in diet; exposure to cold and moisture; severe bodily exertions; sexual excesses;* and not unfrequently diabetes has been observed to make its first appearance during the convalescence from febrile diseases of greater or less gravity, especially after intermittent fever. Besides these exciting causes the following substances, which, whether introduced into the general blood-current or into the portal circulation, have been found to cause mellituria with more or less certainty: Curare, cantharis, carbonic oxide, chloride of carbon, nitrite of amyl, nitro-benzole, phosphoric acid, turpentine, corrosive sublimate, nitrate of oxide of uranium, morphia and strychnia; injections into the veins of solutions of common salt, of carbonate, acetate, phosphate, hyposulphite, valarianate and succinate of soda; of ether, alcohol or ammonia into the portal vein and of large quantities of lactic acid into the stomach.

The Symptoms of diabetes set in at times suddenly, but in general very gradually, with an increase of the urinary excretion and of thirst. Its initial stage, if there be any, is characterized usually by loss of appetite, nausea, vomiting, pyrosis, eructations,

irregular action of the bowels, headache, sleeplessness, and even mental aberrations. But perhaps much oftener the disease invades the system unnoticed, until the frequent desire to pass water, the constant dryness of the mouth, the increased debility, or an impairment of sight, force the attention of the patient upon it.

In the proportion as the urine increases in quantity, its *color* becomes lighter, verging on greenish or looking almost entirely colorless and as clear as water; it is free from sediments. Its *odor* is often peculiarly aromatic, likened by the older physicians to that of hay, being derived, according to recent observations, from acetone and alcohol. Its *reaction* is not only acid while fresh but remains so much longer than healthy urine generally does. Its *specific gravity* very commonly rises to 1035 or 1040, and even to 1060 or 1074. Its *quantity* is greatly increased, and generally in proportion to the severity of the disease, amounting to six and eight litres daily.

Next to the altered state of the urine there is *increased thirst and hunger*. The thirst particularly is in direct ratio to the excretion of sugar. Farinaceous and saccharine food not only increases the sugar but also the thirst. The appetite is usually largely increased so that even unusually hearty food, especially the saccharine and starchy seems able to appease the hunger only for a short time. Still at times temporary disturbances with signs of gastric and intestinal catarrh set in, impairing the effect of an exclusively animal diet.

The patients *breath* commonly emits a peculiar, apple-like odor, and chronic pneumonia leading to phthisis is of frequent occurrence, although in patients under favorable surroundings and good dietetic conditions it is developed exceedingly slow.

The *nervous system* shows many disturbances, of which are to be mentioned: pronounced mental affections and aberrations, varying moods, irritability, sadness, melancholy, disinclination to bodily or mental exertion, headaches, sensations in the limbs as being asleep, formication, neuralgic pains, partial anæsthesia, muscular twitchings, and a decrease of the sexual instinct. The most common form of disturbance of vision is occasioned by the formation of cataract, less often by partial paralysis of accommodation, by amblyopia, gradually passing into progressive atrophy of the optic nerve, by hæmorrhagic and inflammatory affections of the retina. The *hearing* is rarely impaired; oftener there is a

nervous roaring in the ears. Blunting of the senses of smell and taste have also been observed.

The *skin* is usually dry, and hectic sweats set in only as concomitants of pulmonary phthisis. As a general thing, there is a great tendency to the formation of furuncles and carbuncles, also at times to gangrene of the skin, or of the toes or even a whole limb. Œdema, especially of the lower limbs, is the result of advanced cachexia, exceptionally only of a complicating severe affection of the kidneys.

Fever, in the absence of inflammatory complications, does not occur; on the contrary, the temperature is very commonly somewhat below the normal, between 95.9° and 97.7° F., and even temperatures as low as 93.2° F. have been observed.

The *duration* of the disease is, in rare cases, extraordinarily brief, lasting only some weeks or months. Such cases occur, without exception, only in children and young persons. Usually the disease lasts for years. No doubt a number of cases have been cured by different modes of treatment, or have at least been greatly relieved.

THERAPEUTIC HINTS.—The diet, as recommended on physiological grounds, should be selected from the following articles: the flesh of mammalia and birds, fishes, oysters, clams, crabs, lobsters, etc., cheese, eggs; salads, cucumbers, water-cresses, spinach, asparagus, cabbage, oyster-plant, radishes, beets, truffles; butter, lard (oil to a certain extent); fruits, especially peaches, cherries, strawberries and currants; nuts. Bread, although containing a great deal of starch, can never be entirely omitted. Milk is allowable, but exclusive use of skimmed milk can only be exceptionally borne; some have seen nothing but detriment from it. Among the spirituous drinks the red wines are allowable; sugared brandies, sweet wines, champagne and cider should be entirely avoided.

Dr. Düring, in Hamburg, treats his patients in the following manner: At six o'clock, A.M., the patient is wrapped in wet sheets and being well covered with blankets, he remains lying by open windows for one to two hours. After having been rubbed until dry, he gets his breakfast consisting of *milk*, with the addition of one tablespoonful of lime-water to one cupful of milk, and stale bread. This is followed by one to two hours walk in the open air. At about $10\frac{1}{2}$ to 11 A.M., the patient receives another piece

of stale bread with some meat, or a soft-boiled egg and half a glass of good red wine mixed with water. Should this not agree he receives instead a plateful of rice or farina soup, with or without milk, the milk being always mixed with lime-water. This lunch is again followed by a walk in the open air of one-half to one hour's duration. Before dinner the patient takes a nap or rest for one hour. For dinner at two o'clock, P.M., he receives rice and roasted meat, or ham or smoked meat, or venison—but without spices or vinegar. In some cases dry peas or white beans, well boiled, are allowed. Dried apples, prunes or cherries, also asparagus, green beans, cauliflower and carrots boiled in water, not in broth and without butter or fat, constitute other articles for dinner. A moderate allowance of green apples or cherries is given only in exceptional cases. The dinner is followed again by a walk of one to two hour's duration. Supper takes place at seven o'clock, P.M., consisting of rice, grits, pearl-barley or water soup, with salt but without butter, and is followed by another half-hour's walk. At nine or latest at ten o'clock the patient retires to bed.

This mode of treatment of Dr. Düring has produced undoubtedly the most gratifying results in diabetic patients, and it clearly demonstrates that the exclusive "meat diet," recommended on "physiological grounds," is very much like the treatment of chlorotics with "iron preparations" on physiological grounds, both of which lack merely in this important point, that they do not cure, because the human body is not a chemical laboratory, but a living organism.

Prout's experience, probably the largest of any observer, and drawn principally from the well-to-do class, is to this effect: "Within the last thirty years I have seen more or less of nearly seven hundred instances of diabetes, and of this great number, as far as minor and concomitant symptoms have been concerned, no two cases have been exactly alike, or have been benefited by exactly the same treatment, so greatly diversified is this apparently simple form of disease."

Therefore a *specific* remedy for diabetes does not even exist, and a homœopathist will only feel gratified to find the special hints extended over a large number of remedies.

Arg. met., Hahnemann says, some forms of diabetes may be cured by silver if the other symptoms correspond to the symptoms of this remedy. Rückert mentions a case which he cured

by Argent., but which died of phthisis afterwards. He mentions: urine turbid, of a sweetish taste and profuse, especially at night; scrotum and feet œdematously swollen; anxiety and pressure in the pit of the stomach and want of breath.

Ars. alb., in a drunkard, horrible thirst, emaciation and exhaustion, with odd hallucinations. Eruptions on the skin and tendency to boils; vulva and vagina become red and swollen, with pruritus; teeth loose; skin dry and mealy; cachexia; kidneys affected; œdema of legs.

Asclep. vin., five cases reported as essentially improved by it: arthritis; bleeding of gums; impotence.

Berber., sticky saliva, like cotton; pale-yellow urine with a gelatinous sediment; pulse slow and weak; paralyzed, bruised sensation in the back; intense coldness of knees.

Canthar., one case improved as reported by Goullon, with frequent and profuse urination, rapid loss of strength and great dejection of spirits. (30th potency in water every two hours).

Carb. ac., one case with short, dry, hacking cough. (Haesseler—$\frac{1}{100}$ and later $\frac{1}{10}$ dilution.) Goullon thinks it one of the most important remedies.

Chelid., enlargement of liver and icteric color of face; bloated face; great weakness, emaciation. (In ten-drop doses of tincture.)

Coloc., urine when voided is white and turbid, when getting cold it coagulates and becomes a milk-white, jelly-like mass, which, when poured out, glides in a compact cake out of the vessel. (Chyluria?)

Cuprum, recommended, but no cures.

Curare, recommended for acute cases.

Digit., recommended, but no cures.

Helon. dioic., several cases reported as cured. Dull, gloomy and irritable; melancholy; complete impotence; pain and lame feeling in back; numbness in the feet, going off by motion.

Iodium, appears to have all the peculiar symptoms of diabetes: unappeasable hunger with steadily increasing emaciation; violent thirst; hepatic and gastric troubles; increased secretion of urine; pulmonary inflammatory symptoms; tendency to eruptions and furuncles. I cannot find that it has ever been given.

Kali brom., tongue red and tender; gums spongy and bleeding; liver tumid and tender; bowels constipated, urine loaded with sugar.

Kali hydr., in complication with pneumonic troubles, recommended by Kafka.

Kreosot., three cures and one improvement. Heaviness all over with drowsiness; dimsightedness; impotence; bruised sensation of chest and all along the back; physical exhaustion.

Laches., recommended.

Lact. ac., recommended by Cantani and used with considerable success by others. Tongue dry, parched, sticky; feeling of emptiness and sinking at stomach; bowels costive, fæces hard and black; debility; aversion to move; chilliness, especially extremities. (First dil. in five-drop doses, morning and evening. J. E. Wittemore.)

Lycop., excessive micturition in gushes; fluor albus drops out in clots; drawing pains in right groin on rising from seat, better after motion. (Lippe.) Sexual desire and power gone; pulmonary phthisis, with hectic fever; gouty lithæmia.

Lyc. virg., from central and sympathetic nervous system; bronchial irritation, with sighing respiration; cardiac depression.

Magn. usta, relieved in one case.

Magn. sulph., cured one case.

Mineral waters, Karlsbad, Gastein, Wildungen, in Germany; Vichy, in France; Bethesda and Gettysburg, in United States.

Moschus, one case with impotence cured.

Natr. mur., despondency; excessive dryness of mouth; no sweat; skin cool; sallow complexion; constipation, with sensation of contraction of the anus.

Natr. sulph., one case cured by Aegidi, with 3d dil., five drops four times a day. Hydrogenoid constitution.

Nux vom., spinal lesions exciting cause; irritable temper; odd sensations in the limbs, fidgets; numbness and paretic condition of the lower extremities; stomach and liver complaints. Good livers, sedentary habits, previous abuse of liquor and drugs.

Opium and its derivatives. Dulness, sadness, weak memory; after mental shocks, or injuries.

Phosphor., gouty diathesis; disease of the brain; cerebral symptoms; cheesy degeneration of the lungs.

Phosph. ac., urine like milk, mixed with jelly-like, bloody mucus, or clear like water; pain in the back and region of the kidneys; sleeplessness; excessive emaciation; great prostration. After loss of animal fluids; after grief, anguish, sorrow and care. "When the starting point lies in the nervous system." (Prout.)

Plumbum, lowness of spirits, anguish and melancholy; diminution of sight; dryness of mouth; dry, cracked tongue; suppura-

tion of lungs; hectic fever; impotence; dryness and brittleness of skin; gangrene. Dr. Hering considered it one of the most important remedies in this form of disease.

Ratan., case much improved.

Sec. corn., is similar to Plumbum; furuncles, petechiæ, gangrene.

Silic., successful in several cases.

Sulphur, cured one case.

Sulph. ac., a case much improved.

Tarant., profound grief and anxiety; loss of memory and dimness of sight; violent pain in lumbar region and paralysis of the lower extremities; miliary eruptions and furuncles.

Tereb., caused sugar in the urine.

Uran. mur. and **nitr.**, many cases have been cured or much improved by either of these preparations, usually administered in the 1st or 2d trituration or dilution, several times a day for weeks. It is indicated, according to Prout, when the disease originates in assimilating derangements. Tongue reddish at edges; dyspepsia.

Dr. Francis Black recommends:

For *debility:* Phosphor., Phosph. ac., Arsen., China, Moschus, Camphora, Picr. ac.

For *liver symptoms:* Digit., Kali bichr., Merc. sol., Iod. m., Hepar, Sulphur, when there is diminished bile in the feces.

Euvonymin, Iridin, Leptand., Podoph., Merc. corr., Iod. m., Nitr. ac., when there is increased flow of bile.

Nux vom., Lycop., Nitr. ac., Merc. corr., Iod. m., Chelid., when there is no marked disturbance in the secretion of bile, but headache, frontal or occipital, vertigo, languor, weariness in limbs, uneasiness about the liver or scapular regions, furred tongue, often indented at sides, loss of appetite, flatulence, great depression and irritability of temper, constipation, with dark or pale motions, or normal color, sometimes alternating with diarrhœa, intermitting pulse and palpitation of the heart.

Amm. mur., when there is lithæmia and catarrh of the fauces extending to stomach.

Colchic., Nux vom., Kali iod., when there is gouty disposition.

Kali iod., in syphilitic taint.

For *urinary* and *sexual symptoms:* Arsen., Acon., Camphora, Tereb., Canthar., Kali bichr., when there is rapid decrease in the secretion of urine with strangury, or excessive itching and sense of fulness in the vagina,

For *pulmonary affections:* Phosphor., Arsen., Iodium, Hepar.

For *nervous symptoms:* Acon., Atropia, Phosphor., Argent., Aurum, Kali hydr., if cerebral.

Nux vom., Veratr., Silic., Phosphor., if spinal, and Acon., Atropia, Opium, Nitrite of Amyl, if tendency to apoplexy.

For *furuncles* and *carbuncles:* Arnica, Phosphor., Arsen., Silic., Hepar.

This list may be enlarged from the above given special hints.

Diabetes Insipidus,

Also going under the name of *polyuria, hyperuresis, urinæ profluxio, polydipsia,* "is applied to every chronic, morbidly increased excretion of urine, free from sugar, which is caused by no profound structural changes of the kidney, and which constitutes either the sole or at least the most prominent and primary morbid phenomenon." (Senator.)

The term diabetes insipidus excludes any temporary increase of urine which is caused by excessive ingestion of fluids, by the use of diuretics, by interference with the loss of water through the lungs and skin, by the absorption of watery exudations, during convalescence from febrile diseases, or during hysteria or other diseases of the nervous system.

The *amount of urine* evacuated in twenty-four hours varies greatly in different cases and in the same case at different times; it may vary from a point only slightly above the physiological maximum to ten or twenty times that amount. Its *color* is pale and clear, resembling water with a slight greenish tint; a peculiar *odor* of the urine is scarcely to be perceived, and its *reaction* is very faintly acid; it becomes neutral and alkaline more rapidly than usual, and *turbid* from earthy phosphates and bacteria.

Its *specific gravity* varies, as a rule, between 1004 and 1010, though it may approach the lower physiological limit, or sink lower than in any other disease, viz., to 1002, and even to 1001. This low grade of specific gravity is not the result of an absence of solid urinary constituents, but of the relatively too great amount of water with which they are diluted. Comparatively there is as great an amount of solid urinary constituents excreted as in healthy persons, at times even a greater. A diminished amount occurs only exceptionally and temporarily, and for any great length of time, or during the whole disease only in consequence of the association of some other malady.

With the amount of urine excreted stands in direct proportion the *thirst* of diabetic patients; it is almost inappeasable. As a very peculiar phenomenon may be mentioned a *great flow of saliva* at the same time in a case observed by Kuelz. The *skin* is generally dry and the temperature insignificantly lowered, but on the other *organs* and on the *general health*, diabetes insipidus has, so far as its direct influence is concerned, no effect worth mentioning, *if the patients are allowed to drink freely.* A sudden deprivation of drink may seriously endanger the life by the drying of all the tissues, and would cause besides a scarcely endurable distress to the patient.

Diabetes insipidus is much more frequently observed in youth and middle age than in later life. As EXCITING CAUSES have been mentioned: injuries of the skull, violent and sudden emotions, chronic diseases of the brain and spinal cord, and a single excessive ingestion of cold beverages or other fluids. The patients very rarely die of this disease if uncomplicated; it may last for years if not an intercurrent disease, or the malady in the course of which the diabetes has arisen, and which is to be regarded as its cause (affections of the brain or spinal cord), terminates in death. On the other hand recovery has been sometimes brought about by an intercurrent disease, by pregnancy, etc.

THERAPEUTIC HINTS.—The single case will have to be studied, and it is quite likely that a remedy might be found to suit the case without having the two prominent signs of the disease: "profuse urination and insatiable thirst," in a very high degree. The following remedies have been recommended: Apis, Bellad., Cepa, Nitrum, Phosph. ac., Squilla. Compare also diabetes mellitus.

Hæmaturia, Passing Blood with the Urine.

The blood mixed with the urine may be *derived:*

1. *From the substance of the kidney.*—In this case the coagula present will be *few*, if the hæmaturia be produced by venous stasis; there will be a *large* number of *renal casts*, entangling blood-cells, present, if the bleeding be caused by inflammation of the kidneys; and there will be profuse bleeding as leads to the formation of large clots in the pelvis of the kidney or in the bladder, only in the rare instances of traumatic lesion of one

kidney (for example, crushing or rupture of a kidney by a kick or the like), or in cases where a highly vascular cancer has grown into the pelvis of the kidney.

2. *From the pelvis of the kidney.*—In this case the hæmorrhage may be more profuse and form blood-clots corresponding to the shape and size of the calices, being most generally caused by renal calculi, preceded by renal colic and attended with calcareous deposits in the urine. If the entire pelvis of a kidney be filled with blood or with masses of cancer, it may happen that the corresponding ureter becomes blocked up and distended with a thrombus, which assumes the shape of the ureter, measuring often more than a finger's length and being of about the size and shape of a lumbricoid worm when finally passed.

3. *From the bladder.*—In this case the blood-clots may form of so large a size that they cannot pass through the urethra without being first compressed by the contraction of the bladder or broken up by instruments. Hæmorrhages of this kind may be caused by traumatic lesions (urinary calculi, external violence upon the bladder), by catarrh and ulceration of the bladder or by suppressed hæmorrhoidal or menstrual flow.

4. *From the prostate gland or urethra.*—In this case the blood often discharges from the urethra without micturition and on examination will reveal the sore and swollen parts from which it derives. Its causes are most frequently external injuries or inflammations, especially gonorrhœal.

The presence of blood in the urine can best be demonstrated by the microscope, which shows the cells in the sediment. However, there are cases where only the coloring matter of the blood is present, but no cell, where, therefore, a dissolution or destruction of the blood-corpuscles has taken place, as in the case of graver forms of typhoid fever, in hæmorrhagic small-pox, in scorbutus, in morbus maculosus Werlhofii, in septicæmia and in poisoning by phosphorus, arsenic and its compounds and sulphuric acid. The source of the bleeding in these cases has been traced to one or the other kidney pelvis, or, more rarely, to both, or to the bladder, or the dissolution of the red cells has taken place even before they leave the renal vessels.

The Causes of renal hæmorrhage, apart from the effects of injuries and cancerous growths, are: different kinds of *inflammations of the kidney substance; active congestion*, like that produced by turpentine or cantharides, or in some persons by asparagus,

or in rare cases by the action of cold upon the integuments of the body; *by venous or passive congestion*, like that although but rarely induced by cardiac insufficiency, or by hæmorrhagic infarction of the kidney, the result of embolism in consequence of heart disease.

THERAPEUTIC HINTS.—**Arnica**, when caused by external violence.

Arsen., hæmorrhoids of the bladder; very painful micturition; scanty secretion; burning pain in the urinary organs; paralytic symptoms of the bladder; great anguish and restlessness; dissolution of blood-vessels.

Calc. carb., in chronic cases; hæmorrhoidal affections; polypi; leucophlegmatic persons.

Camphora, after irritating drugs, especially cantharides, and after exanthematic fevers.

Canthar., violent cutting, pressing and crampy pains in the bladder, extending into the urethra and into the kidneys; strangury, burning pain before, during, and after micturition; cylindrical exudations in the urine; pain increased from drinking water, even from the sight of water.

Colchic., after being drenched when sweating.

Chim. mac., in consequence of severe and long-continued gonorrhœal inflammation.

Crotal., hæmorrhage from all the orifices of the body.

Eriger., empirically used, without any characteristic indications; gonorrhœa.

Hamam., hæmorrhoids of the bladder; passive congestions.

Ipec., profuse bleeding, with fainting, deadly paleness, sickness of the stomach; oppression of the chest.

Laches., the urine looks black like coffee-grounds; scarlet fever.

Lycop., especially in connection with gravel or chronic catarrh.

Mercur., painless discharge of blood; also very violent urging to urinate, and painful micturition, whereby sweat easily breaks out.

Mezer., crampy pain in the bladder; and, after that, bloody urine is voided.

Millefol., pain in the region of the kidneys, with chilliness, necessity to lie down; the blood forms a sediment in the vessel like a bloody cake; pressive pain in the urethra during the flow of blood.

Nitr. ac., according to Goullon, specific in active hæmorrhage, also after mercury; urging *after* micturition, with shuddering along the spine *during* micturition; gonorrhœal affections; dissolution of blood-corpuscles.

Nux vom., after the abuse of alcoholic stimulants, or allopathic drugs; suppression of hæmorrhoidal and menstrual discharges; full, tensive feeling, pressure, and distention in the abdomen, loins, and region of the kidneys; signs of stagnation in the portal circulation.

Phosphor., dissolution of blood-corpuscles; after sexual excesses; after poisoning with turpentine; hæmophiles.

Pulsat., drawing, cutting pain around the navel into the small of the back; penis and scrotum drawn up; crampy pain in the right leg from the knee to the groin.

Secale, passive hæmorrhage; blood thin; blood-corpuscles wanting in consequence of dissolution; or painless discharge of thick, black blood in consequence of kidney disease; coldness of the body; cold perspiration on forehead; great weakness.

Sulphur, after suppressed cutaneous eruptions and hæmorrhoidal discharges; stinging and burning in the urethra.

Tereb., the blood is thoroughly mixed with the urine, forming a dirty, reddish-brown or blackish fluid, or a coffee-ground-like sediment; burning, drawing pains in the kidneys; pressure in the bladder, extending up into the kidneys when sitting, disappearing when walking about; before urination, pressing and straining in the bladder when sitting, going off when walking; burning in the bladder, worst during micturition; in complication with scorbutic affections, and if caused by living in damp, moist dwellings.

Uva ursi, constant urging to make water and straining, with discharge of blood and slime; or constant straining without any discharge at all, or only a few drops of urine, after this cutting and burning in the urethra, which is succeeded by a discharge of blood; hard stools.

Zincum, vicarious bleeding through the urethra in consequence of suppressed menstruation, with pain in the bowels, diarrhœa, and night-cough with expectoration of mucus.

Compare also the corresponding diseases, of which Hæmaturia may be the consequence.

Albuminuria.

Albumen in the urine is not only derived from the kidneys; it may come from the renal pelves, from the ureters, from the bladder, or even from the urethra, when the mucous membrane of these passages has become inflamed, or when some abscess has burst and poured its matter into these channels; but then the percentage quantity of albumen present is only trivial. A highly albuminous urine has been observed after the application of large Spanish fly-blister, in consequence of the inflammation of the urinary passages caused thereby.

A *transitory presence of albumen* in the urine, *secreted by the kidneys*, is usually due to an *abnormal increase of the blood-pressure with perfectly healthy kidneys*, as we find, for instance, in *heart disease*, especially mitral stenosis, or extensive muscular degeneration, in *pleuritic effusions*, in *obliteration of several branches of the pulmonary artery*, as follows upon cirrhotic degeneration of the lung substance, in *emphysema*. Still, as a rule, the above affections of the respiratory organs do not often lead to congestive albuminuria. Much more frequently we meet *albuminuria*, as an entirely temporary symptom, *during attacks of severe fever*, as occur in the course of *severe angina*, in *pneumonia*, in *typhoid fever* and the *congestive stage of the acute exanthemata*, in *pyæmia*, and occasionally in *cerebro-spinal meningitis*. This *febrile albuminuria* is not attended with any specific disease of the kidneys, and must, therefore, not be confounded with albuminuria in consequence of *acute diffuse nephritis*, which so often occurs in diphtheria, relapsing and scarlet fever. This *inflammatory* albuminuria is the prominent symptom *of inflammation of the kidneys*, and especially that form which runs a chronic course. It furnishes the largest percentage amount of albumen to the urine, which we find also usually containing, at the same time, fibrine and white and red blood-cells. It seems that by the inflammatory process the walls of the capillaries within the glomeruli are so changed as to constitute a special perviousness to albuminous substances from the blood. Other diseases of the kidneys, such as fatty degeneration of the renal epithelium, cirrhosis, granular atrophy, amyloid disease of the kidneys, are not particularly characterized by the presence of albumen in the urine, although it may not entirely be wanting in these affections. It is the diffuse inflammation of the kidneys (the acute and especially the chronic form) which

furnishes the largest amount of albumen to the urine, and to which the term *albuminuria* is particularly applicable.

THERAPEUTIC HINTS.—According to Buchner, when in consequence of gonorrhœa or syphilis: Thuja, Sabina, Nitr. ac., Aurum, Cuprum, Tart. emet., (Natr. sulph., Benz. ac., Kali bichr.).

Nitr. ac., worse at night; nausea; sour taste; bilious diarrhœa or constipation; *dry skin;* fever; headache; dull systolic sound of the heart (similar to Arsen.); pressure in the kidneys; turbid, fetid urine; œdema of the feet.

Albuminuria being merely a symptom, but pre-eminently a symptom of acute and chronic nephritis, further and special hints will be given in these chapters.

Uræmia.

Notwithstanding the most strenuous efforts by a host of inquirers to discover the essential nature of uræmia, only conflicting views have thus far been the result of the labors of the different experimenters. The most probable of all theories seems to be this, that "uræmia arises in consequence of imperfect depuration of the blood in renal disease, the results of the retention in the blood of the dross of the capillary interchanges, namely, nitrogenous substances and specific urine contents." (Bartels.)

Acute uræmia, in acute as well as chronic kidney diseases, manifests itself in the form of *epileptic convulsions*, which are succeeded by *coma* or, in some instances, by a condition of *maniacal excitement*. Not unfrequently a series of such epileptic attacks terminate at last in death. At times these uræmic fits are preceded by *dropsy, dyspepsia, obstinate vomiting*, and even *amaurosis*, which latter, however, may subside as suddenly as it comes.

In the **Chronic form of uræmia** the epileptiform fits are usually absent or amount only to twitchings of certain groups of muscles, or they close the scene after long-continued, complete coma. The principal symptoms are increasing *somnolence, apathy*, or *stupefaction*, advancing at last to complete *coma*, frequently preceded by *stubborn* and incessant vomiting of masses which contain carbonate of ammonia. Often there is in this form a most tormenting *itching* of the skin, which compels the patient to scratch himself incessantly, even when lying in a state of unconsciousness. This symptom has been observed in patients who had crystals of urea

upon the surface of their skins, or exhaled a urinous odor from their persons. Lastly there have been observed in chronic renal affections, a long while before the fatal termination, *paroxysms of asthma*, most frequent at night, with intervals of complete freedom.

THERAPEUTIC HINTS according to Buchner:

Main remedies: Arsen., Cuprum, Phosphor., Aurum, Tereb.

Cuprum, eclamptic form; alternation of convulsions and nervous asthma with talkative delirium, which is interrupted by amaurosis or deafness; the most violent paroxysms are followed by apathy and greatest indifference. During the paroxysm: face distorted, often red; eyes projecting, staring; spasms most prominent in the extensors; tongue and breath cold; long, shrill screams; finally exhaustion, sweat, torpor, and cessation of convulsions.

Arsen., in the narcotic form, with œdema of the brain.

Phosphor., where there is acute atrophy of the brain and medulla oblongata.

Hydr. ac., action of heart diminished; pulse accelerated, soft; stagnation of circulation in heart and lungs; palpitation, with indescribable anguish and dyspnœa; depression of sensibility; first convulsions and afterwards paralysis; extreme apathy; slow moaning breathing; rattling in trachea; paralysis of larynx or sudden paralysis of heart.

Nicot., paralysis of diaphragm; indifference; want of reaction; cold forehead; thirstlessness; serous transfusion in the intestines, without diarrhœa; want of secretion in liver and kidneys.

Acute Parenchymatous Nephritis.

This is the **First stage of Bright's disease** of many writers, or *albuminous nephritis* of others, or the acute *desquamative nephritis* of Johnson, or Traube's *hæmorrhagic nephritis*, or the *catarrhal* of some, and the *croupous nephritis* of other recent pathological hand-books.

Its PATHOLOGICAL CHANGES consist in the following: *dropsical effusion* into the subcutaneous cellular tissue, at times also into the pleura, the pericardium, or the peritoneal cavity; still less frequently extensive pulmonary œdema; and rarest of all œdema of the mucous membranes of the folds at the upper part of the larynx. The *kidneys* are enlarged and swollen, especially the

cortical substance, so that the capsule is tightly stretched; the color of the cortical substance on section is paler than normal; it has a dull, grayish-red aspect, and gives a doughy feel; the glomeruli distended with blood, contrast with the paler ground as dark red points and streaks; the pyramids are always greatly congested, sometimes bluish-red in color. In other cases no very essential deviation is exhibited from the normal appearance of the kidneys, with the exception of the swelling of the cortical substance, and even this is in some cases, when the patient died from other causes than the attending nephritis, very slight in degree. Between these extremes many differences in degree appear which correspond to the differences in the intensity of the functional disturbances observed at the bedside previous to death.

The epithelial cells are cloudy and swollen, owing to a deposit of granular masses in them; the interstices between the renal tubules, which are distended and dilated by the swelling of their epithelial lining, appear wider, and contain lymphoid elements in varying numbers; there appear drops of fat in the cellular stroma, and in more protracted cases yellow patches seem to indicate fatty degeneration. In all cases there is an infiltration of the epithelial cells and an albuminous transudation from the blood-vessels. Acute cases are usually attended with hæmorrhages into the tubuli uriniferi, where they form blood-casts, which are also found in the urine; also homogeneous, small and pale cylindrical plugs have been observed filling here and there the lumina of the tubuli.

The Etiology of acute inflammation of the kidneys embraces *specific* and *mechanical causes.*

As Specific Causes must be mentioned: poisoning with cantharides and similar irritating drugs; but *scarlet fever* is the most common cause. Yet not all scarlatina epidemics furnish a like percentage of this disease. For although malignant epidemics, generally speaking, show the largest percentage, yet there are epidemics in which even bad cases produce no nephritis, and others where quite light cases are followed by it; and this is not referable to any imprudent exposure of the patient, as the disease may attack a child which never has left the bed. The onset of the disease, if an average be taken, occurs about the twentieth day from the first appearance of the rash; the earliest date of its occurrence was the tenth, the latest the thirty-first day. With this renal inflammation we must not confound *febrile albuminuria*

(compare Albuminuria), which generally appears at the height of the exanthem and disappears again with the subsidence of the fever.

Next to scarlet fever follows *diphtheria* as a specific cause of nephritis; and like scarlet fever it does not excite a renal affection in every instance, nor does the renal affection stand in direct proportion to the intensity of diphtheria.

Measles, *rubeola* (Rötheln), *small-pox* excite nephritis far less frequently than either scarlet fever or diphtheria, but *relapsing fever* is, according to Ponfink, almost without exception attended by nephritis. Besides these principal specific causes are yet to be mentioned: *erysipelas, carbuncles, phlegmons, profuse suppurations in cavities* where decomposition of the pus begins in consequence of the admission of atmospheric air, and very rare cases of *dysentery*.

The Mechanical Causes which act upon the vessels and thus effect the circulation of the blood through them, are: *Cholera*, which leads to complete stoppage of the circulation in the kidneys and a consequent anuria; *catching cold*, which contracts the cutaneous vessels and drives the blood into the internal parts of the body where it causes an elevation of the blood-pressure; *extensive burns of the surface of the body*, which cause a general depression of the temperature of the body in consequence of the great loss of heat; *abdominal typhus* and *other diseases* attended by an unbroken continuous *high temperature*, which causes dilatation of the vessels and other alterations in the walls of the vessels (of rare occurrence); and *acute rheumatism*, when complicated with endocarditis. *Pregnancy* also is a cause of acute parenchymatous nephritis. Usually its appearance takes place in the last months of pregnancy, and it attacks primiparæ more frequently than women who have already borne children. Its first symptom in the majority of cases is *dropsical swelling* not confined to the lower extremities, but attacking face and hands as well. The percentage of albumen is greater than in nephritis of any of the other causes, and its fearful terminal symptoms: *epileptiform convulsions, amaurosis* and *maniacal excitement* are well-known under the name of *eclampsia gravidarum parturientium et puerperarum*. However it must not be surmised that every case of eclampsia must be ascribed to disease of the kidneys and uræmia, not even if there should be found albumen and a few casts in the urine after the attacks, inasmuch as cases of this kind have been observed which showed after death not a sign of diseased kidneys.

The Symptoms of acute parenchymatous nephritis are in the majority of cases accompanied by the symptoms of the *primary* disease—the *febrile* movement especially must often be ascribed to the latter. In cases from *catching cold*, however, the temperature has been observed to rise above 104° F., lasting commonly but a short time; the outbreak of uræmic convulsions or of secondary inflammatory processes, too, heighten the temperature. *Aching pains in the lumbar region* is not at all a constant symptom and frequently is absent altogether. But a *tenderness* in the region of the kidneys upon deep pressure is often present. *Frequent and excessively urgent desire to micturate*, with the voidance of only a few drops, often of bloody urine, is also not a constant symptom and is apt to disappear very quickly. The *quantity* of urine is always *diminished* at the commencement; the urine may even be entirely suppressed; later, when the case takes a favorable turn, the quantity increases above the normal quantity or may for some time alternately increase and diminish. The urine is at first always *cloudy* from the presence of urates and other elements. Its *color* is from the admixture of blood tinged reddish or is quite dark blackish-red, when a thick sediment of chocolate-brown color is formed, consisting of urates and blood-corpuscles. Its *reaction* is always *acid* and its *specific gravity* varies with the quantity passed. At first it may rise as high as 1031, and later, when the quantity increases, sink as low as 1011, 1009 and even 1006. The urine always contains *albumen*, although in no case as much as in chronic parenchymatous nephritis, and also *casts* of a hyaline nature with epithelial cells from the tubuli uriniferi attached to them, or covered with small drops of fat, also *white* and *red blood-globules* and *their debris*, *epithelial cells* from the uriniferi tubules, and *granular masses*, the latter being probably the detritus of broken-down epithelial cells.

The danger of acute nephritis consists in the retention in the blood of the special constituents of the urine, causing *acute uræmia*, and in the insufficient excretion of water, which leads to *dropsy*, a symptom which is scarcely ever absent, except in very mild cases. The œdema commences usually at first in the lumbar region of the back or in the face; later often an accumulation of water fills the serous cavities of the trunk; in rare cases there is œdema of the glottis.

Vomiting is occasionally at the commencement severe and obstinate; at a later period it may be *uræmic* in its character.

The PROGNOSIS of acute nephritis depends much upon the cause from which it is derived. That following scarlet fever is the most dangerous.

Its transition to a chronic renal affection is only exceptional; that following catching cold or articular rheumatism is perhaps the most prone to chronic renal troubles. Total *suppression* of urine, except in cholera, is a very grave symptom, often fatal; uræmic attacks do not always prove fatal.

THERAPEUTIC HINTS.—In complication with scarlet fever compare: Apis, Arsen., Ascl. syr., Bellad., Bryon., Colchic., Helleb., Kali carb., Laches., Lycop., Mercur., Rhus tox., Secale, Seneg., under the head of Scarlet Fever.

After the abuse of cantharides, or balsam of copaiva, the best antidote is Camphora; after turpentine, Phosphor.

Acon., high fever; restlessness; dark, scanty urine; consequence of exposure to cold.

Apis, after scarlatina or diphtheria.

Arsen., after burns.

Bellad., skin sweaty; renal region very tender to pressure; uræmic spasms.

Canthar., high fever; pulse frequent and hard; drawing, tearing pain in loins and testes, worse from motion; sometimes in spells, stopping breathing; micturition exceedingly painful, drop by drop; scanty, dark urine, with burning in the bladder and urethra; the urine contains cylindrical casts of fibrinous exudation, epithelial cells and blood, and is therefore easily coagulable; constipation; uræmic, cerebral symptoms, like stupor, numbness; after exposure to cold, or mechanical injuries; complication with prostatic derangements, inflammation of the bladder, and stricture of the urethra; after burns.

Chelid., with pneumonia on right side.

Balsam of Copaiva and Cubebs have been observed to cause inflammation of the kidneys, though their sphere of action is not sufficiently known.

Colchic., after getting thoroughly wet; articular rheumatism.

Helon., in connection with pregnancy, and symptoms of approaching convulsions.

Hepar is recommended by Kafka on the ground of its having a decided relationship to croupous exudations elsewhere.

Kali carb., tensive pain in the region of the left side; swelling

of the inguinal glands; œdema of the left foot, extending gradually to the right foot and upwards over the whole body; œdema of upper eyelid; blackish urine, which, on shaking, foams, and on standing leaves a thick, reddish, slimy sediment; frequent, soft, palish evacuations from the bowels; after a blow upon the left side and staying for hours in wet clothes.

Kali hydr., scanty, dark urine; painful micturition; sediment dirty, yellowish; great thirst; heat in the head. Likewise recommended by Kafka on the same ground as Hepar.

Laches., after scarlet fever or diphtheria; dark, almost black urine; difficulty of breathing.

Merc. corr., great dyspnœa; colics and tenesmus; offensive secretions; puffiness of face and feet.

Phosphor., the skin is pale and anæmic; frequent watery diarrhœa; in complication with pneumonia, bronchial catarrh, ulceration of the bones, amaurosis. Antidote to turpentine.

Rhus tox., tearing pain in the region of the kidneys; œdematous swelling all over; after exposure to wet.

Tereb., scanty secretion of dark, (occasionally) bloody urine, which coagulates on addition of nitric acid under the application of heat; œdema all over; intestinal catarrh and diarrhœa; bronchial catarrh, with expectoration of much mucus.

Amauratic symptoms may especially require: Apis, Arsen., Colchic., Hepar, Gelsem., Kalmia, Merc. corr., Phosph. ac., Plumbum.

Chronic Parenchymatous Nephritis.

This is the **Second stage of Bright's disease** of most writers, or the *non-desquamative nephritis* of Johnson. Being as stated in the last chapter occasionally developed from acute nephritis, its *anatomical changes* may certainly be expected to correspond to a certain extent to those described there. We find the kidneys still more enlarged than in the acute form, and being exceedingly anæmic, they look strikingly pale, almost white, with a strong tinge of yellow, wherefore Wilks called them the "**Large white kidney.**" With this yellowish white color of the surface as well as of the cortical substance contrast sharply the bluish-red, stellate venous radicles and the enlarged, but often dark-red pyramidal substance. The microscopical examination reveals the same changes as described under acute nephritis. The long-continued inflammatory hyperplasia of the interstitial tissue

finally results (in consequence of the pressure which the callous tissue exerts upon the blood-vessels), in a gradual obliteration of the glomeruli and a secondary atrophy of the secreting parenchyma of the kidneys, although such kidneys are rarely found much smaller than normal kidneys. In cases like these the left ventricle of the heart becomes hypertrophied. The bodies are always more or less dropsical.

The ETIOLOGY of chronic nephritis shows a small percentage of cases to have grown out of some acute forms, but the great majority of cases develops insiduously *during the course of affections that are accompanied by persistent suppuration*, such as *diseases of the bones* and *joints*, the more severe forms of *inveterate syphilis*, *phthisical, ulcerative destruction of the lungs; in consequence of long-continued exposure to cold and moisture* (a *sudden* catching cold is more apt to produce acute nephritis, and therefore almost all writers on the causes of chronic Bright's disease, mention *living* in cold and wet habitations, *occupations* in which the body is frequently wetted and chilled through, etc., as one of the causes); and in consequence of *marsh miasm*. Young persons are decidedly more frequently attacked with this disease than those who are advanced in years.

SYMPTOMS of chronic parenchymatous nephritis are on account of its insidious inroad at first entirely wanting; not even a pain is felt by those persons who enjoyed previous good health. When no examination of urine has been instituted, the first sign that betrays the malady is *dropsy*, and at the same time the patient appears *pale* and *anæmic*, and complains of *losing bodily strength*. The *dropsy* beginning either in the feet or in the face, extends gradually over the whole body; the external genitals in particular, and also the abdominal walls are greatly swollen, before any perceptible quantity of fluid is collected in the peritoneal, pleural or pericardial cavity. The *general anasarca* develops to a higher degree than in any other disease of the kidneys, often to such an extent that the epidermal layer bursts, and the dropsical fluid trickles out of the cracks in enormous quantities. In such places where the corium has been deprived of its epidermis, frequently follows a gangrenous destruction of the parts. Even the lining mucous membrane of the intestinal tract becomes involved in the dropsical swelling, which manifests itself by vomiting of watery masses and profuse watery diarrhœa. The advance of the dropsy will not be checked until the excretion of

urine again becomes abundant, and even then it may take a long time before it entirely and permanently disappears. When this is accomplished the patients appear skeleton-like, for not only the subcutaneous adipose tissue, but also the muscles have been reduced to the merest remnants; there is extreme anæmia. Should complete recovery take place, which is rarely the case, the convalescence is very slow. Dropsy is absent only in the very mildest cases.

The *urine* invariably contains *albumen*, and when the disease is at its height, in greater quantity than under any other circumstances; it also contains *casts* of various description, epithelium, debris, white blood-cells, urates and uric acid. Red blood-corpuscles appear only transitorily in cases which commenced acutely, for instance, after catching cold. In consequence of and according to the presence and quantity of these contents, the *color* of the urine is ordinarily dirty brown, and darker in proportion to the smallness of the quantity. The scantier the excretion, the more clouded it is—even before cooling. The urates are held in suspension after cooling, when there is a large amount of albumen present, and make the urine thick and muddy. The uric acid crystals fall to the bottom and adhere to the vessel.

The *specific gravity* of the urine is highest at the height of the disease—in some cases above 1040, and it falls below the normal weight as soon as a more abundant excretion of urine sets in, even before the diurnal quantity of urine has reached its normal point. With this fall in specific gravity is not found a like fall in the amount of albumen, while it may be taken as a rule that the relative quantity of urea to a certain extent rises and falls with the rise and fall of the specific gravity of the urine.

The *pulse* at the beginning is usually remarkably slow, full and tense, and the heart-sounds loud and sharp, in persons who, previous to the attack, were robust and vigorous, but later becomes weaker and more frequent, while in enfeebled persons the pulse and action of the heart are weak from the first.

Respiratory difficulties set in only in consequence of dropsy in the serous cavities, or of pulmonary œdema.

Digestion may and may not be disturbed; but vomiting and diarrhœa are frequent symptoms when the dropsy is at its height; the latter may terminate in secondary dysentery and ulceration of the bowels.

Epileptiform attacks, coma, amaurosis, are much less frequently observed than in acute nephritis.

When secondary atrophy has taken place, a *hypertrophy of the left ventricle* develops, with its train of symptoms, in consequence of the obliteration of so many peripheral arterial branches.

The PROGNOSIS of this disease is a *bad* one, when the affection has lasted already for a long time, or is complicated by some incurable constitutional or organic disease, or when the urine is very scanty, high in specific gravity, with a large amount of albumen; or when the urine, after the subsidence of dropsy, is pale, of low specific gravity, never even temporarily attaining a normal density, and still containing albumen and casts in extraordinary number, with commencing secondary hypertrophy of the left ventricle; or when œdema of the glottis or lungs, pneumonic infiltrations of the pulmonary tissue, phlegmonous inflammations of the subcutaneous cellular tissue are added to the already poor condition of the patient.

THERAPEUTIC HINTS.—Compare Acute Nephritis.

Arg. nitr. is said to have caused albuminuria.

Arsen., great anxiety at night, driving out of bed; vomiting of brownish masses, with violent pain in the bowels; pressure and burning pain in the stomach; swelling of the genitals; palpitation of the heart, left side of heart predominantly affected.

Aurum, when complicated with gout, renal calculi, protracted suppurations, syphilis, liver degenerations, mercurial affections. (Buchner.) Melancholy; desires death.

Benz. ac., gouty diathesis, with strong-smelling urine.

Brachiglottis repens, (puke-puke), highly recommended by Dr. C. F. Fisher.

Bryon., intercurrent inflammation and exudation of serous membranes.

China stands next to Arsen. (D. Thayer.)

Colchic., damp rooms; relapses from taking cold in damp weather; suppressed perspiration; affection of salivary glands; cannot bear the smell from cooking.

Digit., peculiar, seemingly rheumatic pains, and catarrhal affections of the lungs, with serous secretions.

Helleb., indifferent, sad, silent; anasarca and effusion in the pericardium or pleura; black urine.

Hepar, after abuse of mercury; renal region sensitive to slightest touch; incessant, painful urging to urinate, with voiding of a few drops of thick urine; fever; thirst; colliquative diarrhœa; night-sweats.

Lycop., hydropericardium; ascites; anasarca, especially lower limbs; oozing of water from sore places of the œdematous legs; urine dark red, scanty, albuminous, with strangury. Very irritable after sleep; scarlet fever.

Nitr. ac., pulse intermits every third or fourth beat; urine scanty, dark brown, smelling strong, like horses' urine; turbid urine; syphilis; abuse of mercury.

Phosphor., tuberculosis; diseases of right heart and of the pulmonary artery. (Buchner.)

Phytol., after diphtheria in rheumatic and syphilitic patients.

When in consequence of exposure to cold and wet: Calc. carb., Colchic., Dulcam., Kali carb., Mercur., Nux vom., Rhus tox., Sepia.

When in consequence of suppuration, cachectic states of the system: Asaf., Aurum, Calc. phosph., China, Ferrum, Hepar, Mezer., Phosphor., Silic., Sulphur.

Buchner recommends for:

Anasarca: Helleb., Arsen., Dulcam.

Hydrothorax: Arsen., Bryon., Colchic.

Hydropericardium: Digit., Arsen., Lycop.

Ascites: Arsen., Aurum.

Affections of the liver: Cuprum, Lycop., Aurum.

After taking cold: Dulcam., Arsen., Calc. carb.

Interstitial Inflammation or Induration of the Connective Tissue of the Kidneys.

This is the so-called **Third stage of Bright's disease** of many authors, or *genuine contracting kidney*, or the *granular atrophy of the kidney*, or *renal cirrhosis*, or *renal sclerosis* of other writers.

It is, according to Bartels, "the result of a primary growth or proliferation of the intertubular connective tissue, and commences and pursues its course quite independently of the other forms of renal inflammation previously described. It is, in fact, an altogether independent form of the disease. This process leads from its commencement steadily to the dwindling of the substance of the gland, a wasting preceded by no anterior inflammatory swelling of the organ. And this wasting does not affect the whole mass of the cortical substance simultaneously, but commences in scattered spots upon the surface of the kidney and extends very gradually from the spots first implicated both upon the surface and into the depth of the organ."

Post-mortem examinations show, in most cases, both kidneys atrophied, principally in their cortical substance, though the medullary substance also takes part in it. The pelvis is occasionally distended to a pouch, but oftener drawn together into narrower dimensions than normal. The capsule is tough and thick, and portions of the renal substance are always found adhering to it. The surface of the gland, after being freed from the capsule, appears finely granulated, and its entire substance is very tough; occasionally small cysts are found in the scanty cortical substance. The *color* of the kidneys is sometimes dark colored throughout, at other times pale, nearly grayish-white, but in no case is that marked yellow color exhibited which we find in the secondary contraction after nephritis. The microscope shows an extensive wasting away of the glandular structure proper, of the renal tubes with their epithelium and of the vessels attached to them. There are extensive layers of very firm and chiefly fibrinous organized connective tissue, and between them here and there some well preserved renal tubules. The great number of wasted glomeruli appear like dark round bodies, in which the outline of the capillary coils is still plainly perceptible. The cysts in the cortical substance above mentioned, appear to be developed from partially dilated and strangulated renal tubules, the contents of the tubes having subsequently suffered *colloid* metamorphosis, and the granules upon the surface of the kidney seem to be the remains of renal tubuli still beset with epithelium. However, such general degeneration is not found in every case. In some only a partial contraction has taken place, while other portions retain their normal appearance; neither are both kidneys always affected alike. In almost every instance, however, there is found *hypertrophy of the left ventricle* of the heart. Other features often met with are: *retinitis albuminurica*, *thickening of the skull cap*, *apoplectic effusions*, and occasionally *dropsical effusions* usually of small amount.

The Etiology of renal cirrhosis is not very clearly understood. It is of rare occurrence in youth, more frequently in middle life, and at any age most frequent in the male sex. As exciting causes are mentioned: spirituous liquors, especially gin, lead-poisoning, gout and inveterate gonorrhœa.

Symptoms.—Its commencement eludes diagnosis. As the first symptom which draws attention to itself is the *frequent desire to pass water*, especially *at night*, and without pain or ache. In some

cases the patient experiences occasional attacks of *palpitation*, accompanied sometimes with *vertigo*, or a sense of great *uneasiness*, or *suffocation*, or *want of breath*, also principally *at night*. In such cases the heart will be found hypertrophied. There also occur occasional paroxysms of *headache* under the form of *hemicrania*, recurring often and lasting for several days. A *terrible itching* of the skin with more or less extended so-called rheumatic pains sets in frequently toward the end of life, but *visual disorders* under the form of *retinitis albuminurica*, also occasionally *a most repulsive smell of the breath* are symptoms of an earlier stage. At first, appetite and strength are not affected, later, however, the *appetite fails*, especially for meat-diet, with occasional vomiting after eating, and an increased *thirst* for large quantities of fluid, with increased excretion of urine. This is followed by *emaciation*, *anæmia*, and *loss* of *strength;* the skin acquires a peculiar *dryness* and assumes *a dirty faded color*, and the *sexual power* is either greatly diminished or lost altogether. The larger number of patients die either of *anæmia* or *apoplexy*, or of *inflammatory exudations into the serous cavities*, or of *inflammatory infiltration of the lung tissue*, or else of *erysipelatous* and *phlegmonous inflammations* of *the general surface* of some part of the body. *Dropsy* may be entirely wanting, except when the disease advances to its most extreme grade, in which the kidneys become incapable of performing their function, or when intercurrent diseases of the lungs or heart, especially mitral insufficiency, bring it about independently of the kidney affection. *Diarrhœa* is often found toward the end of the disease, and then very profuse, watery and fetid. *Hæmorrhages* from different parts of the body (nose, mouth, bronchi, stomach, intestines, and the skin principally of the extremities in the form of petechiæ or ecchymoses) occur likewise in the later stages of the disease. But the most important indications can only be gained by frequent and careful examinations of the *urine*. "As a general rule, *the genuine process of contraction of the kidney is associated with polyuria*. But neither does this symptom at once become *prominent* at the very *beginning* of the malady, nor does it *persist* absolutely to the *very end* of the case. In fact, in the progress of the disease it may *entirely subside* for a longer or shorter interval of time, whenever, from any debilitating influence, the vigor of the heart's propulsive powers is diminished for a longer or shorter period, or the urinary secretion may be

completely arrested for several days before death, if the patient loses much water by any other channel, or severe collapse precedes death for some time." (Bartels.)

The *color* of the urine is *pale yellow*, or *yellowish-green*. It is *clear* without *sediment*, only occasionally *crystals of uric acid*, and still more rarely *urates* are found upon cooling. Its *specific gravity* is, as a rule, below normal, fluctuating between 1004 and 1012, and its *reaction slightly acid*, but may become *alkaline* by decomposition, dietetic or medicinal treatment, or vesical affections. It contains *albumen* in the vast majority of cases, though this abnormal constituent may be wanting at the beginning, or for a greater length of time during the course of the disease, or be absent altogether in exceptional cases. On the whole, however, the percentage of albumen in this disease is much less than that furnished by the inflammatory processes in the kidneys before described; its amount changes greatly according to the mode of life, the food and the general state of nutrition, and there is no constant ratio between the percentage of albumen and the total quantity of urine.

The percentage of solid constituents, especially that of *urea*, is abnormally small; *epithelial cells* from the renal tubes are seldom found; *red blood-corpuscles*, few in number, may be found scattered in the sediment, but never to an extent as to make the urine red or sooty; and white blood-corpuscles or pus-cells seem to derive somewhere from the mucous membrane of the urinary passages.

The most DIAGNOSTIC SIGNS then of renal cirrhosis are: the large quantity of urine, daily secreted, its pale color, its low specific gravity, and the comparatively small amount of albumen it contains, combined with hypertrophy of the left heart. From this the *secondary* atrophy of the kidneys in consequence of diffuse nephritis, differs in the smaller amount of daily secretion of urine; in the urinary sediment consisting of numerous casts of different character and of large quantities of granular detritus; and in the presence of considerable dropsy for a long time.

THERAPEUTIC HINTS.—I find only one case mentioned as having been cured which can be classed under this head, although neither albuminous urine nor hypertrophy of the left heart are mentioned in it, yet both may have been present according to the symptoms. The case is this: L. K. M., æt. 52, of robust frame; family history good. The past and present absence of any œdema,

the general profuseness of urine, with all else, led to the diagnosis of Bright's disease,—variety, granular degeneration. Perspires all over the body, so soon as he gets into bed; perspiration comes and goes all through the night. Cough on first waking. Cough comes as he gets out of bed; continues until he has had his breakfast. It is occasioned by a sensation as if he had a "wheat hull" low in his throat, just behind the manubrium sterni. Lying on his back makes him cough; on right side also. When lying on his back, feels as if fluid rolled from one side of his chest to the other. (Purely subjective, no fluid there.) In the morning, mouth and lips are dry, and lips swallow. Tongue also dry. Lips crack open when coughing. Drinks at night on account of dry mouth. Oppressed for breath; breathes with difficulty, especially after waking. Going upstairs causes it. Is markedly weak now. Rash as it may appear, considering that the sweat did not break out each time he awoke, I gave him one drachm of *Sambuc.*, first dec. dil. in half a glass of water, a dessertspoonful every hour. Result: No sweat that night. May 18th, *Bryon*[30]., for pleuritic pains in the right lateral thoracic wall. This was an old trouble of his—sinapisms and cantharides-blisters having hitherto been applied for them. The action of *Bryon.* won his heart. He had thought the effect of *Sambuc.* on his night sweats "a coincidence;" but the *Bryon.* dispelled the pain inside of fifteen minutes. May 23d, his prescription was *Plumb. met.*, 30th trit., a powder (two grains) every four hours. He has exchanged his pasty yellow look for the ruddy hue of health, for he is a ruddy man now again. (S. A. Jones, Am. Obs., Nov. 1875, p. 561).

Compare also the previous chapters.

Amyloid Degeneration of the Kidneys, Lardaceous or Waxy Kidney.

Amyloid degeneration is scarcely ever confined to the kidneys alone, but exists at the same time in the spleen, the liver, the abdominal lymphatic glands, the blood-vessels of the mucous membrane of the intestines, as well as those of the various other organs, and is invariably the local manifestation of a general constitutional disease, of a *cachexia* which arises from *prolonged suppuration*, in consequence of *scrofula, chronic tuberculosis* or *inveterate and hereditary syphilis. Intestinal ulcerations* favor the

development of the disease more than ulcers of any other mucous membrane.

Post-mortem examination shows in lighter cases no abnormal appearances of the kidneys to the naked eye. In extreme cases the kidneys are greatly enlarged, heavy, tough and firm; the color of their surface is pale, at times almost white, and so is their broadened cortical substance; upon the cut surface in the cortex appears a peculiar polish; but there is no sign of yellow coloration, as is always observed in the equally enlarged and anæmic kidney of chronic parenchymatous inflammation. If a watery solution of iodine or iodide of potassium is applied to the cut surface there soon appear bright reddish-brown points and branching lines, denoting the Malpighian tufts and the arteries with their branches, which have undergone amyloid degeneration, and on adding a drop of concentrated sulphuric acid the *reddish-brown* structures at once turn to *blue*.

Amyloid degeneration often occurs together with chronic parenchymatous nephritis in both kidneys, and as it is furthermore the result of other constitutional troubles, it is scarcely possible to separate its SYMPTOMS from those produced by the coincidental diseases. In fact it develops itself quite insidiously, or, so to speak, *without symptoms*. The *urine*, as a rule, is augmented, and then always clear and pale like water; but when scanty it is darker and occasionally clouded with urates. Its *specific gravity* may sink to 1003, when passed freely, and may rise to 1030 and over, when passed but scantily. It contains *albumen*, and more at the beginning than later, when polyuria has set in. *Casts* are seldom found in any considerable number. *Dropsy* may or may not be present; but if it does appear it usually remains persistent, especially the *ascites*, even in spite of abundant urinary secretion. *Diarrhœa* is very common and nearly always fatal, being induced by ulceration, as in phthisis and syphilis. *Vomiting* is less frequent and consists of watery masses of a faintly acid reaction. Other *uræmic* symptoms, if the vomiting may be considered as such, are still rarer, and the *cardiac hypertrophy* is altogether *absent*, but in some cases the heart has been found small and atrophied. As a rule the fatal issue is brought about by *gradual exhaustion*.

The PROGNOSIS is entirely dependent on the fundamental disease and its DIAGNOSIS is always quite difficult, and in most cases impossible.

THERAPEUTIC HINTS must be derived from a study of the constitutional malady of which amyloid degeneration is the result.

Suppurative Nephritis, Renal Abscess.

This may be produced:

1. *By renal concretions,* which irritate the renal tissue and cause suppuration.
2. *By injuries,* for instance gunshot wounds, bruises, etc.
3. *By chronic retention and decomposition of the urine,* which affects the renal pelvis and parenchyma almost always simultaneously.
4. *By metastasis through embolism of smaller renal vessels with infecting substances,* in consequence of endocarditis sinistra.
5. *By the so-called pyæmic affections.*
6. *By the extension of suppurative processes from neighboring organs,* especially from the perinephritic tissues, the psoas muscle, the liver, etc.
7. *By the misuse of diuretics,* especially of cantharides.
8. *By unknown causes,* perhaps exposure to cold, etc.

The DIAGNOSIS of *traumatic* nephritis rests upon the history of the case; of all other forms it is exceedingly difficult, often impossible.

THERAPEUTIC HINTS must entirely be derived from the special symptoms of the individual case.

Nephrolithiasis, Renal Gravel or Calculi; Nephralgia, Colica Renalis.

Renal gravel and larger renal concretions consist of and are developed from both normal and abnormal ingredients of the urine. *Renal sand* consists of fine powdery deposits; *renal gravel* at most attains the size of a pin-head; *renal stones* are of larger size, but seldom exceed that of a bean. The *chemical composition* of these concretions is various. Of the most frequent occurrence are those consisting of *uric acid;* those consisting of *urates,* especially of urate of ammonia, are found much more frequently in nurslings than in adults; they are soft. *Oxalate of lime calculi* are very hard, thorny and warty, and very irritating to the tis-

sues; they are rare, and occur more frequently in alternate layers with urates. Calculi of *basic phosphate of lime* (bone earth) or of *ammonio-magnesian phosphate*, or of the two mixed, are white or yellowish-white and of not unfrequent occurrence, while concretions of *carbonate of lime* are very rarely found. *Cystine stones* are of a dull yellow color, with scarcely any variation in the shade; they are rare; and still rarer are those composed of *xanthine*, which have a light brown or dark brown color, and a smooth surface. Concretions of *fibrine* are the result of renal hæmorrhages with subsequent secretion of fibrin; they are often found mixed with other kinds of concretions; they have a dirty white or yellowish-brown color, and their consistency is that of wax, tough and elastic. We know little of the ETIOLOGY of nephrolithiasis. Heredity and family idiosyncrasy, also habits of life and conditions of nutrition are among the predisposing causes mentioned.

SYMPTOMS.—Renal sand usually causes no inconvenience to the patient; it is washed away with the urine. Gravel and calculi are often attended with more or less pain in the region of the kidneys, and when entering the ureters may cause the most severe paroxysms of pain, known under the name of *renal colic* or *nephralgia*. Most usually the pain is only on one side, following the course of the ureter down into the bladder, and in males, into the corresponding testicle which is generally drawn up, often radiating to the glans penis, and causing a feeling of numbness in the corresponding lower extremity. These paroxysms of pain often alternate with remissions, but when at their height cause vomiting, cold perspiration, cold extremities, small pulse, great agony, collapsed features, even fainting fits and general convulsions. Pregnant women often abort under these circumstances. The urine is voided only drop by drop, with burning in the urethra, is scanty, red, brown or blackish, exceedingly loaded with blood, often mixed with mucus or pus, or is suppressed altogether, with subsequent uræmic symptoms, when the ureters of both kidneys are obstructed at the same time. The urine is often colorless, as clear as water, when only one kidney is affected and its ureter obstructed, and it is of very rare occurrence that complete anuria should take place, if only one kidney be diseased. During the intervals of renal colic the urine shows at times single crystals or particles of the urinary components constituting the renal calculi. The paroxysms of extreme pain

cease, as soon as the calculus has completed its way through the ureter into the bladder; this occurs suddenly in most cases. In other cases the colic abates only slowly and gradually, when for instance the stones are of but slight consistency and crumble by degrees into smaller particles within the ureter. In some persons attacks of renal colic appear periodically and at regular intervals of time. The latter attacks are milder than those previous, if the size of the calculi be not larger than the ones previously discharged, because the accumulation of fluids accompanying each attack results in enlarging the calibre of the ureter.

Nephrolithiasis is a chronic affection. A fatal termination may occur when, as the result of the arrest of a renal stone during its passage through the ureter, a rupture of the latter takes place, which is followed by fatal peritonitis; or when, as the result of complete arrest of the urinary secretion by obstruction of the ureters, uræmia is developed. *Hydronephrosis*, that is a dilation of the pelves and ureters by the retained urine, or suppuration of the renal parenchyma in consequence of the presence of renal calculi, assume a very chronic course, as one sound kidney usually is capable for a long time of performing the normal functions of both.

THERAPEUTIC HINTS.—A prevention of the formation of renal sand and calculi will be possible only by a deep study of the single case, and a long course of treatment based thereon. The physician is called in most cases only to prescribe for the present emergency, the *renal colic*, and here Homœopathy has won many victories. The following remedies have been applied in many cases most successfully. A prescribing of opium or morphine in large doses or hypodermic injections is not at all the highest aim to which a student of Homœopathy should aspire.

Arnica, piercing pains as if a knife were plunged into the region of the kidneys; violent tenesmus of the bladder; chilly and inclined to vomit. Sulphate of morphia had been given in large doses without relief. Arnica, 1st dec. dil., in water, relieved in half an hour. (A. E. Small.)

Arsen., passage from time to time of gravel with dull pain in renal region, extending down to ureter; gastralgia; tickling and itching in urethra; difficult micturition; sediment of uric acid. (Bourgeois.) Urine alkaline, dark yellow, with sediment of mucus and crystals of urate of lime. (Schadler.)

Bellad., spasmodic, crampy straining along the ureter, through which the calculus makes its way. After opium or morphine.

Berber., when there is red sediment in urine, pain in back, etc. (S. E. Newton.)

Canthar. high; intense pain above crest of ilium. (S. Swan.)

Diosc., has relieved the writhing, twitching and crampy pains. (E. M. Hale.)

Lycop., after Nux vom.; colicky pain in the right side of the abdomen, extending into the bladder, with frequent urging to urinate. Urine incrusting the vessel with red sand.

Nux vom., always the best remedy after the palliative use of so-called anodynes; pain, especially in the right kidney, extending into the genitals and right leg; nausea; vomiting; constant urging to urinate; insufficient urging to stool; inability to lie on the right side; better while lying on the back; rising and walking about increases the pain.

Opium, or **Morphine** is given by the old school in large doses, to *lull* the pain; it is indicated where there are pressive, squeezing pains, as though something had to force its way through a narrow space; shooting pains from different places into the bladder and testicles; vomiting of slime and bile; obstinate constipation; dysuria; greatest anxiety and restlessness; constant changing position; face hot; pulse slow.

Piper meth., pain agonizing; irresistibly impelled to try all sorts of motions and positions for relief, without finding it. (Hiller.)

Tabac., constant deadly sickness of the stomach and retching, with cold perspiration; violent colicky pains in the region of the ureter, right or left side.

The following may also be mentioned: Calc. urinaria, Cannab., Eriger., Eupat. perf., Galium, Sarsap., Silic., Zincum.

Pyelitis, Inflammation of the Renal Pelvis.

In the *catarrhal* form the blood-vessels of the mucosa are distended, and the surface of the mucous membrane is covered with mucus or a muco-purulent secretion. In the *diphtheritic* form we find upon the mucous membrane yellow spots, which consist of mortified tissue.

In the *calculous* form stony concrements are always present.

Pyelitis may be excited by the abuse of balsam of copaiva, cu-

bebs, turpentine, cantharides; by catching cold; by the presence of urinary concrements, animal parasites; by the ammoniacal decomposition of the urine; in women after obstetrical operations, in the puerperal stage, and during pregnancy; by inflammation of neighboring parts; and it is often a complication of typhus, typhoid, and exanthematic fevers, of diphtheria, cholera, carbuncle, and scurvy.

It usually runs a latent course, when it is the accompaniment of some severe constitutional affection. In the catarrhal form the urine is always acid, often contains some blood, mucus and pus, and at times epithelial cells of the renal pelves. A sense of weight or pain in the region of the kidneys, extending downward to the bladder, slight febrile movements and digestive disturbances are often, but not always present.

When it is caused by ammoniacal decomposition of the urine, it is always a complication of some other chronic disease, strictures, hypertrophy of the prostata, catarrh of the bladder, spinal diseases, etc., which cause a retention of urine. Its symptoms are finally those of uræmia.

The inflammation of the renal pelvis sometimes extends to the parenchyma of the kidneys, when it is called **Pyelonephritis.**

The most characteristic symptom of pyelitis is the presence of *epithelial cells of the renal pelvis* in the purulent urine. But these are not always found and the maladies which accompany pyelitis are often of so grave a nature that the morbid manifestation in the kidneys is altogether overlooked.

THERAPEUTIC HINTS.—*Purulent sediment*, Canthar., Merc. corr., Nux vom., Petrol., Phosphor., Pulsat., Sepia, Sulphur.

Gravel in the urine, Lycop., Sarsap. Compare the preceding chapter.

Perinephritis, Paranephritis, Inflammation of the Renal Capsule.

The capsule appears injected and infiltrated with exudation, or covered with purulent secretion, in consequence of which, adhesions are formed with neighboring organs. It may lead to a thickening of the capsule, or to the formation of abscesses.

Primarily, it is caused by external injuries, and exposure to cold.

Secondarily, it may be a continuation of an inflammatory process in its vicinity, or of pyæmia.

Its SYMPTOMS very much resemble those of other inflammatory affections of the kidneys. There are rigors, followed by fever, and a temperature usually reaching $103\frac{1}{10}°$ F.; there is a dull and often acute pain in the region of the kidney or kidneys; there is constant desire to urinate, with but little discharge; the urine is highly colored and hot, but contains no blood, thus differing from nephritis, nor purulent sediments, thus differing from pyelitis. There is vomiting, and when an abscess is formed, the pus discharges either into the peritoneal cavity, or, in consequence of adhesion, gradually burrows downwards in different directions between the different fascias, or works towards the surface and breaks through in the lumbar region. In the latter case we observe a gradual increasing swelling in the renal region, which fluctuates, points and bursts.

THERAPEUTIC HINTS.—Acon., Arnica, Bellad., after exposure to cold or external injury; Hepar, Mercur., Silic., for abscess.

Morbus Addisonii.

Quite a number of well observed cases have been recorded, in which the symptoms of this disease have been found in connection *with disease of the supra-renal capsules*, so that the probability of a relation of cause and effect between the two becomes almost a certainty. The morbid changes found in the supra-renal capsules consist of a proliferation of small cells in consequence of chronic inflammation and a final breaking down of the structure into caseous masses of various sizes. In this way gradually every trace of proper tissue disappears and we have nothing left but a firm caseous mass, which has grown from the middle of the medullary portion towards the surface. There also have been observed in many cases of undoubted Addison's disease *hæmorrhages* into the tissue of these bodies, which may be so severe as to swell one of them up into a tumor the size of a child's closed fist; less frequently new formations are found, comprising carcinoma, sarcoma and echinococcus.

The changes met with in *the sympathetic nervous system*, such as: deposition of pigment in ganglion cells, fatty degeneration, proliferation of the connective tissue, excessive hyperæmia and dila-

tation of the vessels, are changes which also have been observed in connection with other pathological processes.

Symptoms.—Among the first signs of the disease which the patient can recall after ailing for months and longer, are great *weariness* throughout the body, and *tearing, dragging pains* in both hypochondria (frequently more intense in the right), along the back, in the sacrum and especially in the joints, which latter resemble most closely the arthritic neuroses of hysterical individuals and which might be mistaken for acute rheumatism, if it were not for the absence of any swelling or alteration in the shape of the joints. With these are associated dyspeptic symptoms, such as cardialgia, eructations, loss of appetite, nausea, vomiting and distention of the stomach and abdomen. The fat of the body is at first well preserved, but the loss of muscular power is apparent very early, manifesting itself by a slight tremor of the hands, an inability to squeeze tightly and a tiredness after very little exertion. These symptoms may be considered as the *prodromal* stage.

Further on we observe an exceedingly *soft, small, weak* and generally *rapid pulse, weak cardiac impulse* and a *want* of sharpness, or of even faint casual murmurs here and there, in the case of all the valves as also of the larger vessels. Resulting from this there is a remarkable paleness of the skin, sometimes amounting to cyanosis, a somewhat quickened respiration and a temperature generally somewhat below the normal. The dyspeptic symptoms increase and an alternate constipation and diarrhœa is often present. The urine remains normal. Along with these symptoms, a more or less distinctly marked *discoloration of the skin* gradually develops, commencing as a light dusky gray and passing on to dark brown, first on the hands and face, either as a mottling, or diffusely, or occasionally in streaks. The areola of the breast, the genitals and the folds of the axilla color most intensely. On the mucous membrane of the lips and cheeks, irregular bluish or blackish spots occur; the sclerotic, the nails, the palms of the hands and the soles of the feet, however, remain perfectly clear. With this associates quickly or more slowly an intense *anæmia* and *debility, painful deglutition,* profuse *diarrhœa* and *vomiting, headache, dulness of the sensorium,* difficulty in collecting *his thoughts, weakness of memory* and actual *fainting fits,* and *epileptic seizures.* Meanwhile the discoloration of the skin attains to an intensely dark bronze-color, through all the shades from an ashy

gray, darkly icteric, mulatto and even copper-color, while the sclerotics still remain strikingly white.

There are cases in which the symptoms run a more acute and tumultuous course, when the patient after ailing for sometime is suddenly confined to bed with great prostration, trembling of limbs on being raised, confusion of mind, dry tongue and lips, covered with sordes, a frequent and small pulse, and a temperature of 104° F., similating precisely a case of enteric fever if it were not for the absence of rose-spots and enlargement of the spleen.

Pulmonary consumption is the most frequent complication, which mixes itself up with the peculiar characteristics of Addison's disease, that we are often induced to look upon the double set of symptoms as almost inseparable.

The PROGNOSIS is thus far considered fatal. We have not, to my knowledge, an authenticated case of this disease cured in our literature.

THERAPEUTIC HINTS.—J. Payr recommends: **Bellad., Natr. mur., Iodium, Ol. jec. asel.**, Cinchona, Ferrum, **Phosphor.**, Cuprum, Lycop., Carb. veg., **Arg. nitr.**, Ars. hydr.

Hughes mentions: **Arsen., Calc. ars., Kreosot.**

Lilienthal refers to: **Psorin., Therid.**, according to Baruch, and Natr. sulph., to which I may add **Kali carb.**, on account of the paretic effects upon the heart-muscle of potassa salts; **Sepia** and **Sulphur.**, especially for the earlier stage.

A. Rockwell has seen beneficial effects from the application of the *Faraday current.*

DISEASES OF THE BLADDER.

Cystitis, Inflammation of the Bladder.

As the walls of the bladder consist of a mucous lining interiorly, a muscular coat exteriorly which is partly covered by the peritoneum, and connective tissue between them, it is clear that an inflammatory process may have its seat more or less exclusively in any of these tissues, or involve the whole structure. Books speak therefore of:

Cystitis catarrhalis, when the mucous membrane; of

Cystitis submucosa, when the submucous connective tissue; of

Cystitis subserosa, when the subserous connective tissue; of *Perycystitis* or *Paracystitis*, when the peritoneal covering; and of *Cystitis parenchymatosa*, when the whole structure is the principal seat of the inflammatory process. But these forms are always more or less mixed up with one another.

The *catarrhal* form, when *recent*, is characterized by congestion of, and mucous secretion from, the mucous membrane, when *chronic*, by a livid appearance of the membrane, and slate colored spots on it; the membrane itself gradually disorganizes, is found softened, thickened, infiltrated, and covered with a thick, grayish, purulent secretion, which by decomposition makes the urine ammoniacal. The inflammation rarely stays confined to the mucosa, but spreads to the submucous connective tissue, causing the formation of abscesses, or involves the muscularis inducing hypertrophy of the same. In this way the walls of the bladder may attain great thickness; the bladder may enlarge in size generally, reaching often as high up as the navel (eccentric hypertrophy); or its size may shrink down to that of a walnut (concentric hypertrophy). Sometimes, when the bladder is capacious, the muscular bundles are pushed asunder and the mucous membrane prolapses between them, and becoming in time more and more distended by urine, forms *diverticles* of the bladder, which by degrees may attain the size of a fist and over. As the urine contained therein is scarcely ever completely evacuated, these diverticles of the bladder form exceedingly fit places for the retention of concrements and the consequent formation of stones.

The *abscesses* which form in the connective tissues may *burst internally*, and before bursting, if they be situated in the posterior or lateral walls of the bladder, may by their bulging into the bladder greatly obstruct the flow of urine from the ureters and cause regurgitation of the urine to the kidneys, or if situated in the neighborhood of the neck of the bladder, may lead to complete retention of urine. An abscess may also *burst externally*, either into the peritoneum with rapidly following peritonitis, or into the cellular tissue surrounding the bladder, giving rise to infiltration of urine, inflammation, intense congestion, œdematous swelling of the ano-perineal region, perforation of this region, or the rectum or vagina, and escape of urine through the fistulous openings subsequently remaining. In other cases fistulæ may form at the side of the pubic symphisis.

Cystitis may be *caused* by exposure to cold and wet, by exter-

nal injuries, by irritating drugs (cantharides, copaiva balsam, etc.), either administered internally or injected, by calculi, by retention of urine, by extension of inflammatory processes in neighboring organs (diseases of the prostata, strictures and inflammation of the urethra, etc.), by infectious diseases.

SYMPTOMS.—The acute form is characterized by severe pain in the region of the bladder, which is worse from external pressure and motion, and frequently extends along the ureters upwards into the kidneys, or downwards through the urethra, by *frequent painful micturition and strangury.* The urine is voided drop by drop, under great straining, and a feeling of scalding; it is highly colored, hot, and occasionally mixed with blood, mucus and pus. By *fever*, associated with a temperature of 100.4° to 102.2° F., *vomiting, prostration, cold perspiration, singultus*, etc., in severe cases.

The *chronic* form is not so acutely painful, but always attended with frequent urging to micturate, and the passing of turbid urine which, after standing, yields a heavy, thick, glairy, viscid sediment of muco-purulent matter, which, on being poured from one vessel into another, falls out as a ropy mass. The specific gravity of the urine is not remarkably increased; its reaction is at times slightly acid, at other times neutral, or alkaline; its smell is often offensive, ammoniacal. The chronic form is subjected to frequent acute exacerbations from any irritating cause, and is generally found in advanced age. Its PROGNOSIS, if once advanced to a high degree of disorganization of the bladder, is very doubtful.

THERAPEUTIC HINTS.—The most infamous practice is the administration of morphine, which not only gives no real relief, but destroys all chances of recovery by paralyzing the whole nervous system.

High fever; restlessness; constant urging, yet fearful of voiding the urine on account of the painfulness of the act, **Acon., Bellad.**

Violent burning in bladder, **Acon., Arsen.**

Burning and pressure in bladder, **Nux vom.**

Violent tenesmus and burning, **Canthar.**

Bladder largely distended, **Arsen.**

Congestion of the head; tongue red and dry, **Acon.**

If attended with vomiting, cold perspiration and axiety, **Arsen.**

Vomiting and nausea, **Canthar.**; great thirst, **Arsen., Canthar.**

Frequent small pulse, **Canthar.**

After a fall, blow, etc., **Arnica.**

After taking cold, **Mercur.**, **Pulsat.**

After irritating drugs, **Camphora.**

In chronic cases, Calc. carb., Carb. veg., Coloc., Dulcam., Lycop., Phosphor., Petrol., Sulphur, Sarsap., Uva ursi.

Acon., in all acute catarrhs, characterized by high fever, restlessness, and brought on by exposure to cold, dry winds. The urine is scalding hot, dark red or turbid; micturition painful, difficult, sometimes only drop by drop; children reach with their hands to the genitals and cry out.

Apis, urine scanty, smoky, bloody; if caused by cantharides.

Arsen., burning pain, especially at the commencement of urinating; fever; great restlessness; cold perspiration; face and extremities cold; or in chronic cases with inability to void the water; bladder greatly distended and paralyzed; urine turbid, mixed with pus and blood.

Bellad., if not better some twelve hours after Acon.; rapid sinking of strength; the region of the bladder is very sensitive to the touch; the urine hot and fiery-red, clear at first, but soon becoming turbid on standing, and depositing a copious, slimy, bright red, bran-like sediment.

Berber., stitching, recurring, crampy pain; constrictive pain in bladder; thick mucous and bright red, mealy sediment.

Camphora, if caused by cantharides, balsam of copaiva, turpentine, etc.; after measles.

Cannab., if not better after Canthar. within about twelve hours; gonorrhœal inflammation; urine loaded with mucus.

Canthar., spasmodic pain in the perinæum along the urethra down into the testes, which are drawn up; intolerable burning pain in the bladder; cramping pain in the thighs; cutting through the abdomen; burning pain in the glans penis, the orifice of which is reddened; micturition difficult, only drop by drop, with a feeling as though melted lead were passing through the urethra, with violent straining, which increases the pain; urine at first clear, but afterwards turbid, bloody, scanty, or only blood; painful erections of the penis; great restlessness and fever; thirst, but drinking or even the sight of water increases the pain.

Carb. veg., in old people and chronic cases where the acute inflammation has subsided and only blenorrhœa exists.

Caustic., when in consequence of long retention of urine the musular coat becomes paralyzed; compare Helleb., Hyosc., Arsen., Gelsem.

Chimaph., urging to urinate after micturition; the urine is high-colored, depositing a copious, mucous sediment; constipation.

Coloc., after alleviation of the most violent symptoms, when the pain during micturition extends all over the abdomen, and the urine looks turbid when first voided, depositing, on standing, a tough, mucous sediment, which can be drawn into strings.

Copaiva balsam, swelling and dilatation of orifice of urethra.

Dulcam., in chronic cases, with constant desire to urinate, deep in the abdomen; urine is limpid when voided, but assumes an oily consistence on cooling, and contains a tough, jelly-like, whitish, or reddish mucus, intermixed with little lumps of blood; it smells foul. All symptoms grow worse when the weather changes from warm to cold.

Elater., constant heat at neck of bladder, with extremely painful micturition, inducing even convulsions.

Gelsem., detrusor and sphincter muscles paralyzed; bladder distended; urine constantly drippling off involuntarily; not a drop by straining; no pain.

Helleb., the inflammatory process increases slowly to the greatest violence, with constant desire to urinate, causing spasms; little urine is voided; constant nausea; distended abdomen.

Hydrast., thick, ropy mucus and bloody sediment.

Hyosc., retention of urine, so that the bladder becomes largely distended; urine turbid, depositing a mucous or purulent sediment; great thirst; dry tongue; delirium; subsultus tendinum.

Kali bichr., urine alkaline and ropy.

Laches., discharge of bad-looking mucus during micturition; dull pain in the bladder; sensation as if a ball were rolling in the bladder.

Lycop., dull, pressing pain in the region of the bladder and abdomen; the urine is turbid, milky, depositing a thick, purulent sediment of a most nauseating smell; chronic cases; disposition to urinary concretions.

Mercur., fever with chilliness; great soreness in the region of the bladder when touching it; violent urging; the urine flows in a thin stream, or only drop by drop; contains mucus, blood, even pus; during micturition sweat breaks forth; gonorrhœal inflammation.

Natr. mur., pain is greatest after micturition.

Nux vom., painful, ineffectual desire to urinate, or discharge of urine drop by drop, with burning and tearing; pale urine followed by thick, whitish, purulent matter, with violent, burning pain; spasmodic retention of urine; constipation, with ineffectual urging; after drugs, or suppressed gonorrhœa.

Pareira brava, constant urging to urinate, with violent pain in the glans penis and straining; the pain is so great that it extorts loud screams from the patient; always worse after midnight till morning; the urine has a strong ammoniacal smell, and contains large quantities of thick, tough mucus.

Phosph. ac., when the urine looks like milk, and quickly becomes decomposed.

Popul., chronic catarrh; chronic gleet; elderly persons.

Pulsat., after exposure to cold, the urine deposits a slimy sediment, which sticks to the vessel; tenesmus and stinging in the neck of the bladder; the pain continuing a while after micturition.

Senega, urging and scalding before and after micturition; urine loaded with mucous shreds.

Sepia, in chronic cases; distention of the lower portion of the abdomen; annoying, itching sensation in the region of the bladder, with urging to urinate, especially in the night; the urine does not flow until sitting on the vessel for some time; during and after micturition chilliness and heat in the head; the discharge of mucus does not take place at each evacuation of urine, but comes on periodically; sometimes pieces of coagulated mucus clog up the urethra; admixture of a kind of dark brown pigment; constipation.

Sulphur, constant desire to urinate, day and night; the urine drops slowly out of the urethra; it deposits thick, tough mucus, which sticks to the bottom of the vessel; purulent sediment; after micturition, the pain continues in the urethra until a new urging ensues; stools likewise painful; feverish and sleepless through the night; cutaneous eruptions here and there on the body; suppressed itch; gonorrhœal discharges; hæmorrhoidal disposition.

Tereb., sensitiveness of hypogastrium; tenesmus of bladder; strangury; burning in region of kidneys; urine deposits a slimy, thick, muddy sediment. After drinking cold water while being heated.

Uva ursi, frequent urging with little discharge, and a burning, cutting pain afterwards; the urine is yellow, but deposits a tough mucus; sometimes blood and mucus are voided at the same time with great straining; severe spasm of bladder before micturition; at all times burning and tearing pain in region of bladder; constipation.

A number of other remedies may present themselves for consideration: Calc. carb., Capsic., Conium, Eriger., Graphit., Hepar, Nitr. ac., Phosphor., Sarsap.

Compare also the remedies mentioned under the head of Kidney Diseases.

Calculi Vesicæ, Stones in the Bladder.

Calculi vary from the size of gravel to conglomerations of the size of a man's fist, and even larger. In shape they are either round, or flat, or rough, irregularly shaped.

In regard to their chemical composition, they consist either of crystals of *clear uric acid*, or a combination of uric acid and ammonia, soda, magnesia or lime. These are hard, heavy, brown, yellow, or grayish-white, and are mostly smooth, roundish, rarely irregular in shape.

Next in frequency are those which consist *of phosphates*. They are not so compact, but are brittle, crumbly and light, of a whitish, grayish, seldom yellowish color, and of a roundish shape, with a smooth but sandy surface.

Still rarer are those which consist *of oxalate of lime*. They are the hardest and heaviest of all, have a dark brown or blackish appearance, an uneven, wart-like surface and are therefore called mulberry stones.

Conglomerates which consist *of carbonate of lime*, or *cystine*, or *xanthoxyde* are of very rare occurrence, while *mixtures of urates* and *phosphates* are quite frequently found. They generally present a striated appearance, or the one material forms nucleus and the other the periphery.

Such urinary concretions may be very numerous. Liston extracted five hundred from one bladder. They are usually formed in the renal pelvis, and work their way gradually through the ureters into the bladder, where they remain and increase in size. Stones which are formed primarily in the bladder are generally solitary. They are either movable in the bladder, or

they are entangled between the folds of its mucous membrane, or they have formed by their weight an extension of the bladder, where they are held stationary, or they have originated in a diverticle of the bladder.

Those which roll about freely in the bladder are always of a roundish shape and smooth, while those which are stationary assume an uneven and jagged surface. Very large stones nearly fill the cavity of the bladder; they have been found to weigh from five to six pounds.

Gravel passes away without much difficulty. Neither do smooth and movable stones, if not too large, cause much inconvenience. But when they are of larger size, and of a rough and irregular shape, they cause considerable trouble.

SYMPTOMS.—1. *In rare cases the patient feels a heavy body in the bladder moving about when changing position.*

2. *Pain in the neck of the bladder* when walking, standing, sitting or during stool; still worse when riding in a carriage or on horseback, but much less during rest, and especially while lying on the back or on the face. This symptom becomes quite characteristic when, after riding in a carriage or on horseback, there follows—

3. *A discharge of bloody urine* and an increase of catarrhal inflammation of the bladder.

4. Sometimes the pain is not felt in the bladder at all, *but in the glans penis and along the urethra,* which constantly tempts the patient to squeeze and pull at the penis. This constant irritation may lead boys to the habit of masturbation and the frequently repeated pulling may produce an elongation of the penis and hypertrophy of the prepuce.

5. *Strangury* commences when the last drops of urine are voided and continues for a while afterwards.

6. *Sudden stoppage in the flow of urine* (although the bladder be not emptied) by the rolling of a calculus before the opening of the bladder. In other positions, especially that of lying on the back, the urine flows again.

7. Sometimes *a distinct feeling,* as though something were wedged into the neck of the bladder, causing difficulty in making water, when a calculus has been driven into the opening at the neck of the bladder.

8. *Reflected pains,* as spasms in the rectum, vagina, testicles, kidneys, perinæum, legs, etc.

9. In rare cases, when there are many stones in the bladder, on succussion of the body they may even be heard and felt rattling in the bladder.

10. Examination by the metallic sound reveals a hard body, which, on being struck, gives a metallic sound.

THERAPEUTIC HINTS.—Large stones, it is true, cannot be dissolved again, but belong into the domain of surgery. But it is a question whether we cannot do something *to prevent their formation.* According to our records a number of remedies have shown themselves efficacious in expelling gravel and in restoring a normal secretion of urine. If such be the case, is it not equal to preventing larger conglomerations? and is not one pound of prevention worth more than ten pounds of cure?

Moreover it is true that all who suffer with gravel need not necessarily become affected with stone in the bladder; just as every one who falls need not necessarily break his neck. But who can tell beforehand the result in either case? The remedies, after the use of which gravel and small stones have been observed to be discharged, are: Aspar., Berber., Calc. carb., **Calc. urinaria,** Cannab., Ipom. (Jeanes), **Lycop., Lyth. carb.,** Nitr. ac., Nux vom., Petrol., Phosphor., Pulsat., **Sarsap.,** Sulphur, Tabac., Uva ursi.

Among the new remedies are mentioned, Aln. rub., Chimaph., Collin., Corydal., Eriger., Eryng., Eupat. arom. and perf., Frasera, Galium, Gossyp., Podoph.

For particulars, study Lythiasis Renalis, Catarrh of the Bladder and the Materia Medica.

Hyperæsthesia or Irritability of the Bladder; Spasm of the Bladder.

Hyperæsthesia shows itself as an increasing intolerance, especially of the neck of the bladder, for the normal irritation of the urine, so that even a small quantity of urine excites a more or less painful urging to pass water. Such a condition may often be traced to a rapid fall of temperature, or to too often repeated sexual indulgence.

Spasm of the sphincter is much severer; it is attended with strangury, that not a drop of urine is allowed to escape; or if by reflex action, the detrusor urinæ be alternately irritated, the urine is squirted out in jerks, with frequent interruptions, or passes

slowly, drop by drop, with much trouble and pain. It is often attended with neuralgic pains in the hypogastrium and in the ano-perineal region, which may spread to the urethra, glans, testes, clitoris, thighs, loins and inguinal region, and upwards to the epigastrium and lowest ribs. These vesical spasms may occur at each attempt to pass water, or only occasionally; sometimes the urine escapes involuntarily. The paroxysms may last from a few minutes to half an hour or more, and usually subside when the urine flows; when very severe, they may be accompanied by great excitement, anxiety, nausea, vomiting, clonic convulsions, small pulse and cold perspiration. In uncomplicated cases the urine is usually of a normal condition, at times remarkably pale, like urine in spasmodic affections generally.

Spasm of the bladder occurs in children and adults, and may be caused by mental excitement, excessive sexual indulgence, onanism; drugs, sour wine, young beer, sitting on damp and cold ground; they may be connected with diseases of the rectum, such as fistulæ, fissures, ulcers, hæmorrhoids, etc., or with other neuralgic affections and various cerebro-spinal diseases.

THERAPEUTIC HINTS.—The *irritability* of the bladder is frequently met by:

Arnica, feeling of great fulness of the bladder.
Bryon., worse from moving.
Colchic., gouty diathesis.
Ferr. phosph., worse in daytime.
Nux vom., after taking cold.
Ox. ac., worse when thinking of it.
Rhus tox., worse in the night and when at rest.
Sabina, gouty diathesis.
Sulphur, irresistible desire to urinate on seeing water running from the hydrant, similar to **Canthar.** and **Lyssin.**

Spasms of the bladder principally: **Bellad., Hyosc., Nux vom., Opium, Pulsat., Rhus tox., Ruta, Sulphur.** Other remedies will be suggested by the causes and connections of this trouble.

Atony, Paresis, Paralysis of the Bladder.

The *detrusor urinæ* loses its power to contract, and in consequence the urine is only partially or not at all expelled. This causes great distention of the bladder. The patient complains

that he can only make water slowly; the desire to pass water becomes less frequent, is felt only when the bladder is greatly distended, and then only for a short time, if not soon attended to. The stream of the water grows feebler, is frequently interrupted, and at last voluntary efforts are unavailing, but the presence of the accumulated mass of urine becomes so great that the sphincter yields and the urine escapes in drops involuntarily, and has a disagreeable ammoniacal odor. By and by the paralysis also extends to the *sphincter*, and now the urine flows away uninterruptedly, which constitutes true **Incontinentia urinæ.** But even in these cases the bladder is never fully emptied, and it occasionally happens that, in consequence of this prolonged retention of urine, uræmic symptoms supervene.

The DIAGNOSIS is readily made out by *percussing* the region of the bladder, which will be found greatly distended, and by introducing the catheter, which will drain off immense quantities of urine.

Paralysis of the bladder is found in diseases of the brain and spinal cord, in typhoid fever, in consequence of the bad habit of suppressing urgent calls to urinate, in old age, in diseases of the prostate, after injuries to the bladder or urethra, or spine.

THERAPEUTIC HINTS.—Care should be taken to drain off, by the catheter, the accumulated urine in time, and, if possible, at regular hours.

Arnica, feeling of fulness of the bladder with urging and impossibility to void urine. (Aegidi.)

Arsen., urging in the bladder and bowels without success; great anxiety and restlessness; after taking cold. (Gauwerky.) Paralysis of bladder in old people. (Krummacher.)

Canthar., after having retained the urine too long voluntarily.

Caustic., from long retention of urine.

Cicuta, paralysis of the bladder with great anxiety about it.

Gelsem., constant dribbling of urine, but not a drop flows on making the greatest effort; bladder distended up to the navel; no pain, not even on pressure.

Helleb., paralysis of the detrusor; œdema of the legs; vomiting of all he eats; constipation; sleeplessness; despair of getting well. (Mossbauer.)

Hyosc., after labor, and in children with affections of the head. (Small.)

Iodium, incontinence of urine in the aged.

Nux mosch., hysteria with strangury.

Nux vom., after catching cold; after sexual excesses.

Opium, retention of stool and urine.

Phosphor., in spinal troubles.

Staphis., involuntary discharge of urine, acrid and corroding, with burning; worse from motion; constipation; straining or external pressure causes no discharge; after difficult confinement. (Wm. Gross.)

Compare also: Bar. carb., Bellad., China, Ignat., Lycop., Natr. mur., Phosphor., Podoph., Rhus tox., Ruta.

Enuresis Nocturna.

Wetting the bed *may* be a bad habit with some children, or the consequence of their sleeping too soundly, but in most cases it depends upon a local atony associated with increased sensitiveness of the neck of the bladder. It is more frequently found in boys than in girls, and it ceases on the average about the tenth or twelfth year, latest at puberty.

THERAPEUTIC HINTS.—Rough and harsh treatment will be of no avail.

Amm. carb., enuresis occurring at any time at night; pale urine; red sediment. (Greeley.)

Arg. nitr., incontinence of urine during the day.

Bellad., starting in sleep; moaning and screaming during sleep; scrofulous glandular swellings.

Benz. ac., when the urine has a very penetrating smell.

Calc. carb., scrofulous children, who sweat and catch cold easily.

Caustic., enuresis during first sleep; chronic, periodic swelling of the tonsils; sequelæ of itch; sweat on genitals; green halo around the candle-flame. (Wm. Gross.) Blepharitis ciliaris of herpetic nature. (Goullon.)

Chamom., child cross, has to be carried; whooping cough as a complication. (Miller.)

Chloral, enuresis in the latter part of the night, even if they have urinated during the night and drank no water. (Oehme.)

Cina, urine profuse and of strong ammoniacal odor; great appetite soon after leaving the table. (O. M. Pierson.)

Equisetum, when there is no tangible cause except a habit.

Ferr. met., when the child presents an anæmic appearance with

pale face which flushes easily from excitement or pain. (Hering.) Frequent wetting the clothes during the day.

Ferr. phosph., similar.

Kreosot., when it is very difficult to waken the child out of sleep. (Boenninghausen.)

Plantago, copious enuresis; atony of the sphincter.

Sepia, follows well after Caustic.; same symptoms.

Silic., complication with worms or chorea.

Sulphur, diagreeable sensation of hunger with flushes of heat about 11 A.M. (Goodno.) Pale, lean children with large abdomen, who love sugar and highly seasoned food, and abhor to be washed.

Thuja, when the urine is highly colored and of a strong smell; warts here and there. (Linsley.)

ORGANS OF GENERATION.

MALE GENITALS.

VENEREAL DISEASES.

We understand by this term all those morbid affections of the genitals in particular, and of the whole system in general, which originate *ex usu veneris* in consequence of the absorption of a specific poison. The nature of this poison is as little known as that of small-pox, or of scarlet fever and measles; only that it is not volatile, but fixed to the morbid secretion. As to the rest, like either of them, it produces, when introduced into a healthy organism, a certain series of symptoms specific in their nature, by which process the same virus is produced anew, capable of further propagation. The principal forms caused by this specific contagion are: *gonorrhœa, chancre,* and *constitutional syphilis in all its various forms.*

It lies entirely beyond the limits of this work to go into any details in regard to the different views about the identity or non-identity of the venereal virus and its effects, as have been set forth in the last fifteen years by a number of renowned syphilodologists. Their works alone would make up a small library. I shall merely give what seems to be the result of these controversies adopted by the majority at present.

Gonorrhœa.

We understand by it a virulent catarrh of the genital organs, which in appearance is entirely analogous to any other catarrhal inflammation of any of the mucous membranes; but which en-

tirely differs from all the others by being the result of a specific virus, acquired during coition with an individual thus affected.

Its seat is usually the fossa navicularis, and that portion of the urethra which lies back of the glans; sometimes, however, the inflammation extends further back to the bulbus, the membranous portion of the urethra, and even to the neck of the bladder.

In women the inflammation and secretion extend over the vulva, vagina and urethra, sometimes spreading even into the womb.

Symptoms.—The first symptoms generally appear from one to two, rarely from six to eight days or more, after the infection. They consist of a tickling sensation at the orifice of the urethra and in the fossa navicularis. Soon there is an increased secretion of mucus in the urethra, which pastes the lips of the orifice together; the tickling changes into burning, and the mucus, at first transparent, becomes thick, whitish, yellowish, greenish, or even bloody, and more or less profuse. The orifice of the urethra is inflamed and swollen; a tensive pain extends all along the urethra into the testicles and inguinal regions; micturition is very painful and frequent.

In some cases, the so-called *synochal* or *phlegmonous gonorrhœa*, the inflammation extends into the parenchyma of the glans, which appears darkened and swollen; and into the corpus cavernosum, with exudation, which forms hard places in the penis. This gives rise to the so-called **Chordee**, by which, during erections, the penis is bent either downwards or sideways. The urine can be passed only drop by drop, with the most intense pain and great straining. The discharge becomes still more discolored—dark or bloody, even ichorous; or it is not discharged at all, on account of the high state of inflammation. The prepuce is contracted, and cannot be brought back over the glans—**Phimosis**; or it is contracted behind the glans, and cannot be brought forward—**Paraphimosis.**

The inflammation spreads even to the neck of the bladder and the neighboring areolar tissue, in consequence of which abscesses may form and break through the perinæum, giving rise to fistula urinæ.

Other cases, the so-called *indolent* or *torpid gonorrhœa*, are attended with very little pain; and the only symptom which is of any inconvenience to the patient is a more or less profuse mucous discharge. This indolent form is usually found in persons who have had the disease several times. It seems, that the system

gets accustomed even to the most violent poisons, as may be seen in prostitutes. Yet, innocent as it seems, it is generally very obstinate, and is apt to become chronic; and if transferred to other persons not quite so hardened, it may cause the most virulent symptoms. In still other cases—the so-called *erysipelatous gonorrhœas*—the glans and prepuce are œdematously swollen and inflamed, as in erysipelas. The pain is not so great as in the synochal form, and the discharge is of a more watery, ichorous nature.

Mild forms of acute gonorrhœa are said to run their course in about five or six weeks; but most cases assume a chronic form and are then called **Gonorrhœa secundaria** or **Gleet.** This form is usually without pain; when there is any, it is a fixed pain in the fossa navicularis. The discharge is mostly watery, sometimes thick and yellowish. Usually there is only a single drop, and that to be seen in the morning; at other times the lips of the meatus urinarius merely stick together; sometimes, however, the discharge continues to be more or less profuse. This state of things may last, with various degrees of severity, for months, even years.

In the female the symptoms of gonorrhœa are nearly the same; generally, however, they are less painful, because the *vagina*, the part principally affected, is wider and less sensitive than the urethra in the male. Still, in higher degrees of inflammation, and when extending to the female urethra, the clitoris and the labia, it may become quite as painful. The discharge is then quite profuse and discolored, excoriating the external parts. Frequently it is associated with condylomata on the inside of the thighs and around the anus. Excoriations and ulcers also exist on the neck of the uterus, and sometimes the morbid process extends into the womb and ovaries, causing chronic catarrhal affections there. Its cause is, as stated above, an infection by a specific virus.

Catarrhal inflammation of the mucous membrane of the sexual organs may be brought on by a variety of causes—irritation by foreign bodies, sexual excesses, coitus with menstruating women, or such women as suffer with acrid leucorrhœa. Even drinking new wine or sour beer may cause strangury and a gonorrhœa-like discharge. Such inflammations are of a much lighter nature, and cease in a few days without medication; but as we cannot distinguish between a chronic gonorrhœal discharge and a mere

acrid leucorrhœa, it is very well to know that a gonorrhœa-like discharge *may be caused* by a mere acrid leucorrhœa, if for nothing more than to preserve the peace of a family.

The gonorrhœal virus is transferable by the muco-purulent discharge of a gonorrhœal patient whenever it comes in contact with the mucous membrane of the urethra or vagina of a healthy person. None are proof against the contagion, although some persons are more easily infected than others; and any one who has once had gonorrhœa is very liable to have it again.

THERAPEUTIC HINTS.—The number of recommended remedies for this complaint is great, but yet the curing of it is often a difficult task. For its very first stage Grauvogl has recommended Natr. sulph.; Jahr, Sepia; Wahle, Bryon.; Baehr, Merc. sol.; Kafka, Sulphur; a number of others, Cannab. Schüssler: Ferr. phosph., later Kali mur. and Kali sulph.

In this, as well as in all other cases, we must closely individualize.

Acon., inflammatory stage.

Agave Americana, excruciating, painful erection; chordee, strangury; drawing in the spermatic cords and testicles, extending to the thighs, so violent that he wishes to die.

Agn. cast., gleet, yellow purulent discharge; old sinners with sexual inability.

Alum. P. S., gleet.

Ant. crud., urine mixed with blood; suppression of urine.

Arg. nitr., burning in the urethra during micturition, with a feeling as though the urethra were swollen and sore inside; the last portion of the urine remains in the urethra; discharge of blood and pus from the urethra; chordee; sensation as if the urethra were drawn into knots; swelling of penis; feverishness.

Calc. carb., gleet, after Sulphur; fat, lymphatic persons.

Camphora, sticking together of the meatus; chordee; testicles relaxed; want of erections.

Cann. ind., priapism; chordee; involuntary erections and emissions; nymphomania.

Cann. sat., great swelling of the prepuce, approaching to phimosis; dark redness of glans and prepuce; light red spots on the glans, of the size of a lentil; inflammatory stage with all its painful symptoms, especially violent burning in the urethra during and after micturition.

Canthar., when the inflammation has spread to the bladder, with intense tenesmus; bloody discharge and soreness of the urethra during the flow of gonorrhœal mucus; violent and very painful erections at night.

Capsic., white discharge like cream; cutting, stinging pain in the urethra without, burning during micturition; chordee.

Clemat., after great straining a few drops of urine pass away, which is followed by a full stream without pain; after this sometimes dribbling of urine.

Colchic., scanty, dark, albuminous urine; constant urging with burning in urethra when urinating; whitish, flocculent or purulent sediment in urine.

Copaiva, soreness, smarting, itching and swelling of urethra; purulent discharge; violet smell of urine; eruption like measles, or urticaria with great itching.

Cubeb., dark and reddish discharge as if mixed with blood; violet smell of urine; cutting and constriction after micturition.

Doriph., glans swollen and bluish-red; gleet.

Ferrum, gleet, painless discharge like milk.

Ferr. phosph., inflammatory stage.

Fluor. ac., gleet, little discharge during the night, which makes a yellow stain on the linen; oily transpiration of the genitals with a penetrating smell.

Gelsem., whitish discharge; severe erections; burning when urinating; rheumatism; orchitis.

Graphit., gluey, sticky discharge at the meatus urinarius.

Hydrast., acute and chronic form; feeling of debility and faintness after each passage from the bowels.

Kali bichr., a drop of urine seems to remain after micturition, which cannot be expelled and troubles for a long time.

Kali mur., gleet combined with eczema (latent or visible); or a disposition to glandular swellings.

Matico, in acute and chronic forms—no particulars given.

Mercur., when complicated with chancre; or in gleet, after Cannab., when the discharge is yellowish-green and purulent; discharge more profuse at night than during the day. Phimosis, bloody pollutions.

Mezer., gleet; hæmaturia during gonorrhœa; tearing pains from front to back.

Millef., swollen penis; discharge of blood and watery slime.

Natr. mur., after injections of nitrate of silver, in gleet; in gon-

orrhœa-like discharges from acrid menstrual discharges; cutting and burning *after* micturition.

Nitr. ac., in complication with chancres, balanitis and fig-warts; small blisters on the orifice of the urethra and inner surface of the prepuce, forming chancre-like ulcers; painful brown spots of the glans; after mercurial treatment; gleet; ulcerating buboes; condylomata.

Nux vom., after the use of copaiva and cubebs, and after allopathic treatment; dull pain in the back part of the head; hæmorrhoidal disposition; constipation; suppressed discharge, with swelling of the testicles; high living.

Petrol., chronic cases with stricture of the urethra; prostatitis; frequent emissions and imperfect erections; itching and humid eczema on scrotum, perineum, or between the scrotum and thighs.

Petros., troublesome tickling and itching in the urethra, with constant desire to urinate, worse in the morning in bed; better when sitting or standing, chronic cases; suitable for old persons.

Phosphor., gleet; every morning a drop of watery fluid at the orifice of the urethra, sticking its lips together; also in case of hypertrophy of the prostata.

Phosph. ac., gleet; every morning a few drops of a white discharge from the urethra, and in the evening discharge of prostatic juice.

Pulsat., in consequence of suppression of a gonorrhœal discharge, swelling of the testicles and prostate gland; inflammation of the eyes.

Sarsap., rheumatism of the joints after suppression.

Sepia, gleet, no pain, no discharge, except through the night a drop or so, staining the linen yellowish; or milky or greenish discharge, attended with pain in the back; frequently quite important for women.

Sulphur, the orifice of the urethra is red and feels hot; whitish discharge; no pain or some slight burning in the urethra; rheumatic pains; chronic inflammation of the eyes; chronic prostatic affections; hæmorrhoidal disturbances; psoric cutaneous eruptions; gleet.

Tarant., chronic form; loss of memory; timidity; weakness; great nervous agitation; burning of soles of feet and palms of hands; shaking, twitching and incessant movements of legs, worse when quiet.

Tereb., chordee; gleet; gonorrhœal rheumatism.

Thuja, gleet; condylomata; prostatic affections; discharge, thin and greenish; red spots and erosions on the glans; sudden stitches along the urethra from back to front; or a sensation as if a drop of urine were passing along the urethra with cutting pains.

Tussil., acute stage; fixed stinging pain in the fossa navicularis; for persons of high living and irregular habits; chronic stage with inflammation of the eyes and swelling of the testicles, after suppressed discharge.

Besides these, a number of remedies are mentioned and praised by eclectics, (see Hale's New Remedies) but without the slightest characteristic indications.

Complications and Sequelæ.

1. Epididymitis; Orchitis.

Usually only one side is affected at a time; but the inflammation sometimes goes also to the other. The scrotum of the affected side becomes greatly enlarged, is hard, red, shining and very painful to the slightest touch or move; it is usually attended with fever, and follows either upon undue exertions, taking cold, and most frequently after the suppression of gonorrhœal discharges by injections.

Compare Agn. cast., Aurum, Bromium, Clemat.. Hamam., **Mercur.**, Nitr. ac., Nux vom., Phytol., **Pulsat.**, Rhodod., Rhus tox., Tussil.

2. Prostatitis Gonorrhoica, Inflammation of the Prostata,

Is of rare occurrence, and only in those cases in which the inflammation spreads to the neck of the bladder, or in consequence of suppression of the discharge by injections. It is attended with a sensation of heat in the perineum, in the region of the bladder and towards the rectum, and with tenesmus in bladder and rectum. It may end in suppuration and the formation of an abscess, which may discharge its contents into the bladder or urethra, or through the perineum, or it may end in chronic induration of the prostatic gland.

Compare Mercur., Nitr. ac., Phosphor., Pulsat., Selen., Sulphur, Thuja.

3. Gonorrhœa Vesicæ,

That is, a transmission of the disease to the neck, or into the body of the bladder, consequent upon suppressing the discharge by injections. The patient feels violent pains in the region of the bladder, the perineum and anus, with constant urging to urinate. By dint of the greatest straining, a few drops only, of a turbid urine mixed with blood and pus, are discharged.

Main remedy: **Canthar.** Compare Cystitis.

4. Buboes.

Inflammatory swellings of the inguinal glands, which generally grow very slowly, and are brought on either by overexertion or suppression of the discharge.

Compare Iodium, Laches., Mercur., Nitr. ac.

5. Ophthalmia Gonorrhoica.

One of the most dangerous inflammations of the eyes. The infection may be caused either by the direct contact of the poison with the eyes, by means of the fingers or soiled handkerchiefs, or by metastasis.

Compare Acon., Arsen., Bellad., Hepar, **Merc. sol.** and **subl.**, Nitr. ac., **Pulsat.**, Tussil.

6. Gonorrhœa of the Rectum.

Pain in the rectum; mucous membrane inflamed; sphincter spasmodically closed; discharge of purulent mucus mixed with blood.

Compare Mercur., Nux vom., Pulsat., Sepia, Sulphur, Thuja.

7. Strictures of the Urethra.

They consist of a fibrous or callous hardening of certain portions of the urethra, whereby the canal becomes narrowed and the passage of urine difficult or altogether impossible. Their main seat is the membranous portion of the urethra and the fossa navicularis, although other parts likewise may adhere or become constricted in consequence of inflammation.

The first and main symptom is difficulty in making water. The stream is thin, twisted, split and flows in jerks. The bladder cannot be fully emptied and there is a continued dribbling of urine for a great while after micturition.

They are caused frequently no doubt by the use of injections, mismanaged introductions of bougies, the long continuance of chronic gonorrhœa and excessive indulgence in sexual intercourse.

Compare Clemat., Digit., Dulcam., Petrol., Pulsat., Rhus tox., Sulphur.

Gradual dilatation by bougies.

8. Gonorrhœal Rheumatism.

It is sometimes acute, attacking muscles and joints, and sometimes chronic. It has been frequently observed to follow the use of copaiva balsam, or the sudden suppression of the gonorrhœal discharge by other means, and after taking cold. Those of a rheumatic or gouty disposition are, of course, the most subject to it.

Compare Hepar, Mercur., Mezer., Phytol., Sarsap., Thuja.

9. General Contamination of the System in Consequence of Gonorrhœa.

Although modern writers deny such consequences of gonorrhœa upon the whole system, there is not the slightest doubt that a suppression of it is followed, in many cases, by severe and deeply-seated ailments. We find cases on record where its suppression brought on tuberculosis; in others dyspnœa, lasting for many years—until, under homœopathic treatment, an old gonorrhœal discharge suddenly appeared again and the dyspnœa disappeared. Schœnlein, Autenrieth and others acknowledge this, whilst Ricord denies a specific gonorrhœa-virus altogether, which seems to be driving the thing rather to its smallest point, on which it cannot stand. Grauvogl, in his Prophylaxis, gives a whole list of constitutional disorders growing out of gonorrhœal poisoning, among which we find: glandular-like swellings upon the membranes of the brain, on the neck and tongue; in the axillæ and abdomen, and its viscera; deafness; paralysis and mental derangement, etc.

The most important remedies which ought to be borne in mind, and which cover this *gonorrhœal* contamination of the system, as Sulphur does *psoric*, and Mercurius *syphilitic* affections, are, according to Grauvogl, **Natr. sulph.** and **Thuja.**

Balanitis, Gonorrhœa Spuria or Præputialis.

This affection is a profuse secretion of mucus between the glans and prepuce, which is formed only in men with a long foreskin. It is sometimes associated with genuine gonorrhœa, but may just as well originate from uncleanliness, friction, coitus with women who suffer with acrid fluor albus. In most cases it is altogether an innocent affair, although at times it may be of a poisonous nature.

Symptoms.—Itching underneath the prepuce, which appears red and moist. In a few days there appear heat, pain and swelling of the prepuce, with considerable discharge of a yellowish, purulent mucus. Sometimes it is very difficult to push the prepuce back, in which case the glans appears excoriated. If allowed to remain, ulceration and adhesion may form between the glans and the prepuce and cause considerable trouble. If of an innocent nature, it is easily managed by cleanliness and perhaps one dose of **Mercur.**; if it is in connection with gonorrhœa or chancre, it of course assumes the nature of its companions, and requires the same treatment.

Chancre.

The name chancre is derived from *cancer*, meaning a corroding ulcer, with hard bottom and callous edges. Its seat is at the point where the poison gained access, in *men* chiefly the glans, prepuce, frænum, front part of urethra, the penis externally, the scrotum, or the groins; in *females* the labia, vagina, urethra, or the neck of the uterus. But the poison may also be transferred to other parts, such as the lips, tongue, nipples, or fingers, if through wounds, cracks, or denudations, it can enter into the circulation.

There are two theories about the nature of chancre-poison. The one maintains that all is but *one* kind, which may or may not produce constitutional syphilis; the other has tried to prove a duality of the chancre-virus, meaning that there are in reality two totally different kinds of sores, of which each propagates only its own kind. These two different kinds of chancre have become known under the name of *soft*, and *indurated* or *Hunter's chancre*.

The *soft chancre* is according to this theory only a local affection, and inoculable upon the bearer, and upon others, both healthy and syphilitic, to an almost unlimited extent. It de-

velops *without incubation in twenty-four hours.* Through resorption an irritation of the adjacent glands take place, which has an acute inflammatory character, and usually leads to suppuration, but is not followed by constitutional syphilis. The pus of the glandular suppuration has the same properties as the chancre pus.

The *hard chancre* produces and is produced by true syphilitic poison; it is, notwithstanding the assertions of Ricord, inoculable upon the *bearer* and upon *others syphilitic*, but produces then a *soft* chancre, to which Clerc, as Maratray had done before him, gave the name of "*chancroid.*" Whether the poison of this chancroid, when communicated to a healthy person, is capable of producing syphilis, or only local sores, has not been positively determined. The syphilitic poison (of a *hard* chancre) when inoculated upon *healthy* subjects, causes *after a period of incubation of three to four weeks*, a papule, which gradually hardens or superficially ulcerates, or at other times immediately inflames and ulcerates, as in the soft chancre, being followed later by induration together with general syphilis.

The *minute anatomy* of chancre does not show any marked differences between the two; the one thing common to both is a dense cellular infiltration of the tissue of the cutis or mucous membrane. *Induration*, therefore, will not hold good as a positive distinction between the two, especially in the female genitals, where it may be very inconsiderable, even in so-called genuine hard chancres. Only if an affection is seen to begin as a *papule*, at a certain time after a possible occasion for infection, and afterwards gradually enlarging, it may be considered as true syphilis; but if, following immediately after an infection, a *pustule* appears, with subsequent ulceration, which is, perhaps, afterwards neglected by the patient, or irritated in various ways, as by improper treatment, it should be classed under the *soft* chancres, but in such cases it is often impossible to decide whether it is a specific induration or a mere inflammatory infiltration, because the beginning of it has not come under observation; and if we add to this what has been stated before, that a syphilitic or so-called *hard* chancre or ulcer may originate immediately after infection like a so-called *soft* chancre, the diagnosis between the two becomes a complete conundrum. Neither hardness nor incubation prove to be entirely satisfactory. There remains only the subsequent development of constitutional syphilis for a dis-

tinction between the two; but then the chancre has usually disappeared, and our wisdom comes post festum. In praxi then the so-called soft and hard chancre resemble each other frequently very closely, at least while being under observation; but even if we consider the theory of duality of chancre-poison as true above all doubt, this conviction can have no other use, than to confirm physicians who believe in mere *local* affections, in the bad practice of cauterizing, burning and slashing away, which is not in accord with the spirit of homœopathy.

The external appearance of chancre varies. It may, as stated before, commence at the infected point as a papule or a pustule, which by degrees, enlarges, becomes harder, and at last ulcerates, secreting a gray, slimy pus, which adheres to the bottom. This sore at times remains quite superficial, at other times the middle of the tubercle becomes excavated, and at still other times the surrounding tissues become involved in a wide-spread destruction of tissue, when it is called *phagedænic* chancre. If sores form on the inside of the prepuce, or far back on the glans, it soon becomes impossible to retract the foreskin; the ensuing phagedænic process may possibly cause a destruction of the entire prepuce, and even of the glans, in a short time. On the mucous membrane of the female genitals chancres appear as simple *erosions*, which the patient hardly notices, with parchment-like thickening; real tubercular indurations are rare. From being constantly moistened and irritated when on the labia majora or minora, they are gradually transformed into moist hyperplastic growths —the *condylomata lata.*

The *syphilitic poison* is contained in the *primary ulcers*, in the *condylomata lata*, in the *blood* of syphilitic persons, in the *semen* of a man with latent syphilis. Whether the milk, saliva, urine and perspiration of syphlitic persons be also carriers of the poison, is doubtful; but *pathological* secretions, such, for instance, as contained in the vaccine pustules, have, unfortunately, too often proved their infectious nature.

The transmission of syphilis by *inheritance*, is another well established fact. It may be transferred by the *semen* to a healthy ovule; or by the ovule developed in the ovary of a *syphilitic woman*, or later *during the time of gestation*, if the mother acquires syphilis during that time. Whether syphilis be transmissible into the third generation, remains still an open question.

Infection takes place when the syphilitic poison gets underneath

the epidermis, or beneath the epithelium of the mucous membrane of a healthy person. This may be effected in direct ways, by sexual intercourse, by kissing, by wet-nurses, by vaccination, by obstetrical examinations; in mediate ways, by the use of articles which have been soiled by syphilitic poison, such as eating and drinking utensils, tobacco-pipes, cigar-holders, cigars, blow-pipes, surgical instruments, etc.

The *susceptibility* to the syphilitic poison seems in some cases to be diminished by previous infection, but immunity by it is by no means so absolute as Ricord claimed; neither is inherited syphilis a shield against infection. Age does not essentially modify the susceptibility to the syphilitic virus.

For practical purposes there may be made a division of the symptoms of syphilis into groups, according to the order in which they gradually develop, if not checked by proper treatment.

The *first or primary stage* comprises the gradual development of the local symptoms at the point of infection, and the indolent gland swellings in the vicinity. Some six or eight weeks from the first appearance of the primary affection, signs of

Constitutional Syphilis

Or general blood-poisoning make their appearance, frequently accompanied by an eruptive fever. These signs of the *secondary stage* consist of: "superficial eruptions of the skin and mucous membrane, distributed symmetrically over both halves of the body; falling out of the hair and disease of the nails; often anæmia; lymphadenitis universalis; irritative processes in the periosteum and interstitial cellular tissue of internal organs, which subside spontaneously without loss of tissue," or terminate sometimes in permanent derangements of function through adhesions and contractions. The duration of this stage varies from several months to a year, being followed by an intermediate stage of uncertain duration, during which the disease remains either entirely latent or shows itself from time to time in various eruptions upon the skin and mucous membrane, but of less extent and intensity than in the previous stage. The blood-poisoning still existing is transmissible to the offspring.

The *tertiary stage* is characterized by "local affections, for the most part *asymmetrical*, often occasioned by external causes, and consisting in cell-growth, having a tendency either to disintegrate

or to become encysted with caseous metamorphosis and new formation of connective tissue. Gummata of the various organs, ulceration, necrosis, and caries of skin and bone. General state of nutrition usually, though not always, bad." Its limits are uncertain; in some cases it may be mixed up with the secondary stage; as a rule, many years intervene between the infection and its outbreak; it at last develops into *confirmed syphilitic marasmus*, where irremediable changes, as amyloid degeneration, destructive caseous pneumonias, dysenteric and other ulcerative processes, have taken place.

THERAPEUTIC HINTS for Chancre.—Merc. sol., ulcer the size of a pea on the glans near the frænum; painful, itching, sore to the touch, and discharging offensive pus; or several painful ulcers on the glans, on both sides of the frænum, bleeding easily on retracting the prepuce or handling the parts; pain in the inguinal region on walking or on pressure upon the parts; or, ulcer the size and shape of a small bean on the glans near the frænum of some depth, and its base covered with a thin layer of yellow pus; painful to the touch; prepuce red and swollen. (A. Fellger.)

Merc. cinnab., the ulcer on the glans is surrounded by a red-yellowish or red ring; there are lentil-sized red-yellowish, or scarlet-red spots on the glans and prepuce. (A. Fellger.) Also in old, neglected, or badly treated indurated chancres, where Præc. rub. was of no avail; elevated chancres; exuberant granulations of the base of the ulcers; hard, callous, raised, indolent edges of the ulcer; mucous condylomata on the genitals, anus and lips; indolent buboes.

Merc. præc. rub., when Solubilis affects no change within eight or ten days; indurated, old, obstinate chancres; indurations after cauterization; excoriations on the glans; extuberances of the ulcers; inflamed buboes.

Merc. proto-iod., painless chancres with great swelling of the inguinal glands, without disposition to suppurate; swelling of tonsils; affection of testicles; also secondary eruptions. (J. H. McClelland.)

Merc. biniod., chancre and bubo particularly indolent; other symptoms corresponding to the preceding. (J. H. McClelland.) Hard, red swelling of front of prepuce, appearing as thick and hard as a lead-pencil, with a hard chancre in its centre, entirely painless. (A. Fellger.)

Merc. subl. corr., phagedenic chancre, secreting a thin, ichorous pus.

Merc. nitr., in old obstinate cases; dry fig-warts on thread-like pedicles; soft, pointed condylomata.

Mercury, its *oxide* and *chloride* corresponds to chancres with steep, sharp cut edges; the bottom of the ulcer appears lardaceous; hard infiltration of the surrounding tissue. (Von Villers.)

Arg. nitr., little ulcers on prepuce, spreading and becoming covered with a tallowy substance.

Arsen., gangrenous degeneration with burning, restlessness and thirst.

Caustic., acrid corrosive secretion or watery and greenish; complication with eruptions, gout or scurvy.

Corall. rubr., ulcers flat and extremely sensitive to touch, sometimes bleeding; chancres on any part of the penis, or scrotum, very sensitive to touch. (A. Fellger.)

Hepar., chancres secreting watery pus with diffuse borders and red bottoms, elevated above the surface. (Von Villers.) Is indispensable where Mercury has been abused.

Kali bichr., when the ulcer is round and deep, as if chisled out by a sharp instrument.

Kreosot., the prepuce becomes blue and black with hæmorrhage and gangrene. Let the penis remain hanging in a vessel filled with water, which is medicated by a drop or two of the first or second dilution.

Laches., the areola of the ulcer assumes a purplish color; phagedenic chancres.

Nitr. ac., ulcers are painful on slightest touch as if sticks were jagging them. (A. Fellger.) Chancres with raised edges and a disposition to bleed easily and profusely; inclined to spread in circumference with tendency to fungous growth; pains as of splinters; corrosive discharge; buboes threaten to suppurate. (J. H. McClelland.) Chancres with rhagades, characterized by fetor. (Von Villers.) After the abuse of mercury; unpainful ulcers, with gray, wasted edges, easily bleeding; or superficial or elevated ulcers, with zig zag edges; or ulcers with hard, callous edges; or ulcers with a dark, bluish, dirty basis, covered with a crust, from underneath of which ichor issues, or with exuberant granulations, forming a red, spongy basis, like raw flesh; mucous, moist and other condylomata, like cauliflowers or pin-heads on thin pedicles; or phagedenic, ulcerated condition of the entire surface; fistulous ulcer into the urethra; inflamed buboes.

Silic., excessive discharge, foul smelling diarrhœa, bloody and thin; inflamed, irritable, sore, with unhealthy granulation.

Sulphur, chancres with board-like hardness of the red and swollen prepuce; intermediate remedy in psoric persons.

Thuja, round, unclean, elevated ulcers, surrounded with redness, usually moist and painful; condylomatous excrescences. (A. Fellger.) Moist condylomata; elevated ulcers, with exuberant granulations; after Nitr. ac., erosions on the female genitals, with abundant mucous secretions; erosions and rawness between the legs and on the sides of the scrotum; constantly oozing of moisture; ulcers on the penis, cavity of mouth and throat.

Besides, the following are recommended: Jacaranda caraba, Myrica cerifera, Phytol., Sanguin.

THERAPEUTIC HINTS for Constitutional Syphilis.—Arg. nitr., chancre-like ulcer on the prepuce; urethra swollen, hard and knotty; sexual desire gone, the genital organs having become shrivelled; cock's-comb-like fig-warts around the vulva; horn-like excresences.

Arsen., gangrenous and serpiginous ulcers; tubercular syphilitic skin diseases.

Asaf., affections of the long bones with severe nocturnal pains.

Aur. fol. and **mur.**, after the abuse of mercury; secondary ulcers on the scrotum; nightly pain in the bones; swelling of the skull-bones; swelling of the periosteum of the forearms and shin-bones; caries of the roof of the mouth and nose; ulcers on the tongue; falling out of the hair and great nervous weakness; utter despair and prostration of soul and body; attempts at suicide.

Badiaga, whole convolutes of hard glandular swellings; buboes.

Carb. an., buboes becoming phagadenic; gummata; skin tubercles.

Carb. veg., suppuration of bubo; the parts are livid and mottled; partial falling off of hair, with furfuracious desquamation; yellow skin; pain in liver and spleen; palpitation of heart. (J. H. McClelland.)

Caustic., fistulous ulcers; corrosive ulceration of skin tubercles; lupus: complication with gout and scurvy.

Conium, syphilitic sarcocele.

Corall. rubr., syphilitic erosions, exuding a thin, badly-smelling ichor; constant trickling of mucus from the posterior nares into the fauces; smooth, copper-colored spots on palm of hand and finger.

Coryd., nodes on skull; ulceration of fauces; profuse secretion of mucus; fetid breath.

Euphras., old, broad condylomata at the anus, with much burning, especially at night.

Ferr. iod., recommended for mercurial cachexia.

Fluor. ac., skin tubercles on the forehead and face, even when ulcerating; elevated red blotches on palm of hands; squamous eruptions on the body (psoriasis guttata); syphilitic erosions, mucous tubercles; exostoses and nightly pains in the bones.

Guaiac., tearing and stinging in the limbs; aching in the bones with swelling; tearing pains in the skull and bones of the nose; itching, tetter-like eruptions.

Hecla lava, destructive ulceration of the nasal bones.

Hepar, *after the abuse of mercury:* falling out of the hair; painful lumps on the head, and nightly pain in the skull-bones; soreness of the nose on pressure, with red, inflamed eyes; eruptions around the mouth; ulcerated gums, with flow of saliva; swollen tonsils and hard glandular swellings on the neck, with sticking when swallowing, coughing, breathing, or turning the neck, as though a fish-bone had stuck fast; suppurating buboes in the inguinal region and axilla; green, slimy, bloody stools; inflammatory swellings of the knees, hands, and fingers; ulcers, with nightly burning, throbbing and stinging, bleeding easily; nightly pain in the limbs, with chilliness, great nervous weakness.

Iodium, mercurial cachexia; salivation; ulcers in the throat; chronic buboes very hard.

Kali bichr., deep ulcer on the edge of the tongue; ulcer on the velum palati, eating through; fetid discharge from the nose; caries of the bones of the nose, with profuse purulent discharge from the nose; suppurating, solitary skin-tubercles, forming deep holes.

Kali hydr., bubo very hard with a curdy, offensive discharge, if suppurating; thickening of the spermatic cord; ulceration of nose, mouth and throat with corroding, burning discharge; lancinating pains in throat; system depressed; effusion of serum into the cellular tissue; induration of liver. (J. H. McClelland.) After abuse of mercury; tuberculous pustules in the face; roseola on chest and extremities; discolored, large ulcers on the skin; swelling of the bones; nightly bone-pain; bloody stools, with tenesmus; falling out of the hair.

Laches., mercurial syphilis, with ulcerated sore throat, causing a constant provocation to cough, with retching; painful deglutition; regurgitation of drink through the nose; earthy, yellowish appearance of the face, with small red blood-vessels shining through the skin; coryza, nose red and sore; terrible headache; nightly pain in the limbs.

Lycop., secondary, tettery-like eruptions and ulcers in the throat of a dark, yellowish-gray color; cough and hoarseness, from similar affection of the larynx; coppery eruptions on the forehead, and cachectic appearance of the face; dry, pediculated, painless, condylomata on the sexual organs; nightly pain in the limbs during wet weather; low-spirited; desponding; nervous weakness.

Mercurial preparations, compare Chancre.

Mezer., mercurial syphilis, with or without affection of the bones; chronic sore throat; dark redness of the fauces; worse every winter, with burning dryness extending into the larynx; hoarseness; hawking of phlegm.

Natr. mur., if the primary sores have been burnt by nitrate of silver or lunar caustic.

Natr. sulph., granulated inflammation of the inside of the eyelids; swelling and suppuration of the axillary glands; ulcer on the outer side of the thigh; knotty, wart-like eruption on the anus, between the thighs, on the forehead, scalp, back of the neck, and chest; swelling of the ribs near the sternum; stiffness of knees, and cracking of joints; pain in the bones. Compare Thuja.

Nitr. ac., mercurial syphilis; tonsils red and swollen, uneven, covered with little ulcers of the size of a pin's head; soft palate, highly inflamed; deep, irregular-shaped ulcer on the edge of the tongue; foul breath; single, moist sores on the scalp, burning; suppurating pustules all over the face, with broad red circumference, forming crusts; large, soft protuberance on the wings of the nose, covered with a crust; brown spots on the glans, of the size of a lentil, peeling off; squamous eruption, like psoriasis; hard, brownish, little knots on the scrotum and perineum, which suppurate.

Petrol., brown spots on the arms, neck, chest and lower limbs; falling off of hair; rheumatic stiffness of shoulders and ankles. (Bell.)

Phosph. ac., mercurial syphilis; ulceration of the lips, the gums, and the soft palate; swelling of the bones; pain in the bones;

condylomata; carbuncle-like ulcers of the skin, with a copper-colored circumference.

Phosphor., falling out of the hair leaving exposed ulcers on the scalp, implicating the cranial bones; syphilitic psoriasis in the palms of the hands and the soles of the feet; syphilitic roseola; squamous eruptions; mercurio-syphilitic ulcers on the prepuce; bone-pain and exostosis.

Phytol., sore throat; ulcers on the genitals; severe pains in the arms and legs, from the elbows and knees down to the fingers and toes, with œdematous swelling of the affected parts; pain aggravated by motion and contact; feet and legs covered with pale, red spots, about the size of a dime; more scattered on the arms, face and neck; previous use of mercury.

Psorin., moist, itching and burning condylomata on the prepuce; sore corners of the mouth; dry, tetter-like eruptions in the hollow of the knees.

Sabina, fig-warts, with intolerable itching and burning; exuberant granulations.

Sanguin., roundish or oval, whitish and raised patches on the mucous membrane of the mouth, nose, prepuce and anus; a diphtheritic exudation, which, when wiped off, leaves a raw surface behind; congestion of the head; throbbing headache from the nape of the neck to the head; swollen veins in the temples.

Sarsap., mercurial syphilis; squamous eruptions; bone-pain.

Sepia, syphilitic erosions in women.

Silic., mercurio-syphilitic ulceration of skin and bones.

Staphis., *mercurial syphilis;* dry, pediculated fig-warts and mucous tubercles; nervous weakness.

Stillin., extreme bone-pains; nodes on head and legs.

Sulphur, *mercurial syphilis;* itching ulcers, which are soon covered with a crust, discharging pus from underneath; cock's-comb-like excrescences on glans, soft, spongy, easily bleeding; excoriations on the genitals, with burning; copper-colored spots on forehead; hard, large and inflamed buboes.

Thuja, erosions in the female genitals, with profuse gonorrhœal discharges; erosions between the thighs and on scrotum; in the fauces, with mucous tubercles; condylomata, tubercula mucosa; decay of teeth near the gums.

Condylomata, Sycosis, Fig-warts.

These excrescences are a morbid growth of the skin and mucous membrane, or, better defined, of the subcutaneous and submucous cellular tissue. They are of different external appearance, according to their coating. When they are covered by the epidermis, they appear dry, hard, horny, like common warts; when covered with thin epithelium, or when they are entirely bare and excoriated, they appear soft, moist and secrete more or less of a slimy, acrid, badly-smelling fluid. These latter are the *genuine syphilitic condylomata* or *tubercula mucosa.*

Their forms are likewise various; some are flat, upon a broad basis; others are conical, growing on a pedicle; others appear like a cock's-comb. The *flat* fig-warts are chiefly found around the anus, between the glutæus muscles; on the perinæum, scrotum, external skin of the penis, glans penis and on the external surface of the labia in women; whilst the *conical* and *pediculated* are usually found in the entrance of the vagina, on the clitoris and even far back in the vagina, and on the neck of the womb; in males on the interior surface of the prepuce; also between the nates. They sometimes grow so luxuriantly that the whole vagina and interior surface of the prepuce is covered by them. A third kind is quite small, in the shape of pins' heads, which are generally found around the corona in men and on the interior surfaces of the labia in women. In secondary syphilis they appear also in other localities, especially on the tongue, corners of the mouth, chin, face, forehead, eyelids, iris, scalp, meatus auditorius, axillæ, nipples and between the toes. Soon after the outbreak of this pest in the middle ages we read of condylomatous excrescences in the face, which were of a finger's length and which caused for their bearers more ridicule than compassion.

THERAPEUTIC HINTS.—For the *mucous tubercles* the main remedies are Cinnab., Sublim., Nitr. ac., Thuja.

Fig-warts, when complicated with *gonorrhœa,* require Thuja, Sublim., Cinnab., Nitr. ac., Sulphur, Lycop.

When complicated with *chancre,* Cinnab., Nitr. ac., Phosph. ac., Staphis., Thuja.

When *flat,* Magnes., Nitr. ac.

When *exuberant,* like cauliflowers or mulberries, Thuja, Staphis.

When *fan-shaped,* Cinnab.

When *growing on pedicles*, Lycop., Nitr. ac.
When *conical*, Solub.
When *dry*, Thuja, Staphis., Solub., Sublim., Nitr. ac., Lycop.
When *moist, suppurating*, Nitr. ac., Thuja, Sulphur, Euphras.
When *soft, spongy*, Sulphur.
When *intolerably burning and itching*, Sabina.

The Inguinal Bubo

Consists of a swelling of the inguinal lymphatic glands, with a tendency to form abscesses in consequence of syphilitic infection. As chancres may appear on other parts than the genitals, so, also, may buboes appear in other parts: in the axilla, under the maxilla, on the neck. Buboes may also form primarily (without previous chancre on the penis) by immediate absorption of the syphilitic virus. The period of time which elapses between the first appearance of chancre and that of bubo varies from eight days to six weeks.

Symptoms.—Before any thing can be seen the patient experiences a painful tension in the inguinal region, which sometimes extends into the thigh, making walking quite difficult; soon after the patient feels feverish, chilly, and there appears a roundish swelling in the inguinal region, which is painful to contact and motion. It is usually hard, grows, in the course of some days, to the size of a pigeon's egg, and larger, and becomes dark red. If not arrested in this stage it soon commences to assume a more doughy feel, with painful throbbing; finally it fluctuates, breaks, and discharges a quantity of thick pus, which at last becomes watery; now it heals, either like any other abscess, or the wound assumes a chancre-like aspect, with hard, callous edges. In bad cases, it may even assume a phagedenic or gangrenous form, and cause terrible destruction of the surrounding parts.

All buboes do not run this acute course. The so-called *indolent, torpid* or *atonic* buboes form quite slowly, without pain or fever, and continue so until they reach a certain size, which they retain in a seemingly unaltered condition for weeks, or even months, until they finally suppurate and discharge. The so-called scirrhous bubo may remain for years in the same condition.

Its Diagnosis is easy enough, if we ascertain the pre-existence of chancre. It may, however, be confounded with an incarcer-

ated testicle within the abdominal ring; therefore, Ricord advises first to count the testicles before pronouncing an inguinal swelling a bubo. The inguinal glands may swell from other causes. In children, scrofulous swellings of these glands are not unfrequent. We shall, in some cases, no doubt, have to fall back on the history of the case, which may tax our skill in cross-examination.

THERAPEUTIC HINTS.—**Apis**, red, hot, shining swelling, with great stinging pain and sensitiveness.

Arsen., when the open bubo assumes a greenish aspect.

Aurum, after the abuse of mercury, with nightly pains in the bones.

Badiaga, bubo stone-hard and uneven, a conglomeration of indurated glands; violent stitching pain through it at night, as though a red-hot needle were thrust into it. Suppressed chancre by cauterization and mercurial ointments, leaving elevated and discolored cicatrices; general cachectic appearance and rhagades of the skin, here and there.

Carb. an., for hard buboes which threaten to suppurate; it causes resorption where there is even some fluctuation discoverable; old, maltreated buboes, cut open or cauterized, presenting large, terrible ulcers, with callous edges and a secretion of offensive ichor.

Hepar, after the abuse of mercury, for open buboes, which do not heal, and when there is a psoric taint of the system.

Kali hydr., after mercurial treatment; ulcerating bubo, with fistulous openings, and discharge of dark, thin, offensive, and corroding ichor; scrofulous individuals.

Laches., old protracted syphilitic mercurial buboes; hectic fever, sore throat, and the most violent headache, either in the back or front of the head.

Mercurial preparations, compare what has been said under the chapter on Chancre.

Nitr. ac., after the abuse of mercury, when Carb. an. has not been sufficient to reabsorb the swelling, and especially if the still existing chancre presents exuberant granulations on its base.

Sulphur and **Silic.** are especially indicated for old, discharging buboes which do not heal, although other syphilitic symptoms have disappeared.

Besides these remedies, there have been recommended Buboin, Phytol., Sanguin.

Syphilitic Skin Diseases.

The various affections of the skin in consequence of syphilis go under the name of **Syphilides.** Syphilides as a rule are characterized by a peculiar red color, which is perhaps best designated by the term "*coppery red.*" It is most pronounced in persons with dark complexions; in persons with very pale anæmic skin it may at first be wholly wanting, or appear only as the exanthem begins to wane with a yellowish color.

The syphilides consist of a cellular infiltration proceeding from the blood-vessels; but developing only gradually and at different localities, they appear frequently in different forms, so that we see macules, papules, vesicles and pustules side by side in one person, as different stages of development, all of which may ultimately assume the form of ulcers. This *polymorphous* character, however, belongs not exclusively to syphilides, we find it also, though in a less degree, in eczema and scabies.

Another characteristic mark of the syphilides is their *annular* form, similar to that observed in herpes circinatus. It is often very distinct, too, on the mucous membrane, especially on the tongue, on the hard and soft palate and on the glans penis.

Syphilides finally are characterized by an *absence of itching*, or *any other sensation*, although exceptions do occur, especially when the exanthem comes on very acutely.

The various forms of syphilides are:

1. The **Macular syphilide**, or **Roseola syphilitica** consists of a circumscribed hyperæmia with but slight infiltration, and appears in perfectly even, rose-colored, or darker colored spots, of a size varying usually from that of a lentil to that of a pea, with a roundish or irregular shape. After it has existed for several days it leaves under pressure a yellowish stain, and gradually assumes a coppery hue. When the spots are elevated it is called *erythema papulatum.*

Roseola syphilitica is usually the first of all skin affections, and sometimes the sole eruption that occurs during the earlier course of the disease. It may appear in only a few spots upon the sides of the chest and in the groin, and again it may be disseminated over the whole body like an eruption of measles.

2. The **Papular syphilide** consists of a circumscribed infiltration of the papillary bodies of the cutis. It varies from the size of a barley-corn to that of a split pea, and in color from red to brown-

ish-red; it is hard to the touch, but smooth upon the surface. Later its epidermis loosens and is rubbed off when its summit presents a dark red and shining appearance, which again is covered by a thin crust from the oozing of a little serum. In the palms of the hands and soles of the feet the papules are not very prominent on account of the thickness of skin, but they appear only as red circular spots, which become denuded of their epidermis, and which are usually designated by the name *psoriasis palmaris and plantaris.*

The papular syphilide may appear anywhere upon the surface of the skin, but is mostly seen on the borders of the scalp, on the forehead (*corona veneris*), on the back of the neck, especially in women, and in all places where the skin forms folds or depressions, for instance on the chin, between the nose-wings and cheeks, behind the ears, on the borders of the axillæ, in the elbows and in the hollows of the knees. Where these folds of the skin are in continual contact with each other, for instance on the external female organs, the scrotum, beneath the dependent breasts, in the navel, about the anus, at the preputial orifice, the angles of the mouth, between the fingers and toes, these papules are very apt to assume the form of *condylomata lata.*

The eruption of the papular syphilide is often attended with fever, thus simulating somewhat an outbreak of small-pox, wherefore syphilis received from the French the name of *verole grass* or *verole.* It is either one of the first constitutional signs of syphilis or develops gradually from a roseola syphilitica, or does not appear until some weeks after this has disappeared. It is often accompanied by violent pains in the bones or iritis.

3. The **Squamous syphilide** consists of a coalescence of several papules, or a gradual enlargement of a single papule with desquamation of the epidermis, thus bearing close resemblance to the patches of a common *psoriasis.* However, it is covered, especially towards the borders, with loose epidermic scales, or rather thin yellow crusts, by which it may be distinguished from the white thick desquamation of psoriasis vulgaris. Besides, it does not appear on the knees or elbows, which is the favorite seat of common psoriasis.

The squamous syphilide also becomes transformed into flat condylomata in favorable situations.

4. The **Lichen syphiliticus** consists of an infiltration of the follicular walls, with only scanty, or no exudation in the follicles. In

their simplest form they resemble those enlargements of the follicles which occur in many persons upon the dorsal surface of the upper arm, in consequence of an accumulation and desiccation of the secretion, as hard granules like dried gum, which can be excavated with the finger-nail.

The lichen appears usually in groups, at first slightly reddened, assumes soon a yellowish color, peals off and leaves no pigment spots behind (**Miliary papular syphilide**). When there is exudation into the follicle, groups of little vesicles form, which turn into pustules. These crust over and, after drying, leave small, dark scars behind (**Herpes syphil.**). Or, the infiltration spreads further around, and causes the entire surface of the skin, which was occupied by the papular group, to be converted into a desquamating, psoriasis-like group (**Eczema syph.**). Or, there is an acute suppuration in the follicle in connection with the infiltration, causing acuminate pustules upon a red or copper-colored base (**Acne syphilitica**). This form is so similar to common acne that the distinction between the two must be based upon other syphilitic symptoms present or past.

5. The **Pustular syphilide** consists of an infiltration with subepithelial suppuration and superficial ulceration. The pus in these eruptions is not situated in the *follicles, but underneath the epidermis*, independently of the follicles. The pustules develop rapidly in places where the skin is tender, namely, beside the face, in the flexor surfaces of the extremities, on the sides of the trunk, and in the palm of the hand where there are no follicles. They are also more superficial and leave only very shallow depressions, even immediately after the crusts have fallen off (**Pemphigus syphiliticus**). Sometimes the epidermis is raised by a cloudy fluid, which soon becomes purulent and is often tinged with blood, over a reddened base. Such bullæ appear in isolated spots, in preference on the legs below the knees (**Ecthyma syphiliticum**). After dessication there forms at times superficial excoriations beneath the scabs, and at other times deep ulcers, which extend at the edges and occasionally assume a serpiginous form (**Ecthyma superficiale** and **profundum**). It is a manifestation of the later periods of syphilis and an evidence of a poor constitution. When the epidermis of a bulla forms a scab, while the ulcerative process underneath advances slowly beyond its edge, there gradually is produced a large, dirty, brownish-green, stratified crust in the shape of a cone, which rests upon a flat, ulcerated surface (**Rupia**

syphilitica). Such ulcers, proceeding from rupia, may continue to extend for years, and convert extensive tracts of skin into cicatricial tissue.

Rupia is often a manifestation of the later periods of syphilis, though it may break out within the first six months after infection.

6. The **Tubercular syphilide** consists of deep infiltration and disintegration, or a gummous formation. At the commencement only a papule is felt in the skin, without redness. Gradually the papillary body becomes likewise involved, and the tubercle approaches the surface, when it causes redness of the skin, desquamation of the epidermis or scanty serous exudation, which, on drying, forms a small crust upon the summit of the tubercle. These tubercles often develop in groups of a circular or semi-circular form (**Dry tubercles**). Or, the epidermis above the tubercle is raised in the form of a pustule which quickly desiccates, while underneath ulceration proceeds, similating a rupia or assuming at once the form of a sepiginous ulcer. Or, the process of softening may be similar to the development of a furuncle; it gradually becomes bluish-red, and when it breaks discharges a grayish-yellow, gummy-like matter, instead of a core of connective tissue, as in the true furuncle. The remaining cavity gradually either granulates and cicatrizes, or enlarges and assumes a serpiginous character (**Softening** and **Disintegrating tubercles**). These forms of the syphilitic tubercles present a marked similarity to different forms of lupus, whence the name **Lupus syphiliticus.** The tubercular syphilide belongs to the *tertiary* group of syphilis.

7. The **Loss of hair, Alopecia,** occurs without any visible change in the skin. The hair merely loses its lustre, becomes dry, and often discolored, and falls out in large quantities when combed. It is an early symptom of constitutional syphilis, but may not occur until in the later stages.

8. **Alterations of the nails,** such as growing thinner, becoming furrowed or brittle, may take place without any obvious affection of the matrix; but deformities of the same may also be brought on by various syphilides attacking the matrix.

THERAPEUTIC HINTS.—Mercurial preparations, Nitr. ac., Thuja, Aurum, Lycop., Staphis., Kali hydr., Laches., Sulphur, Hepar, Sarsap., Petrol., Cuprum, Corall. rubr., Arsen., Graphit. and many more.

Syphilitic Affections of the Mucous Membranes.

Some of the just described syphilides may also affect the mucous membranes, for instance:

The **Erythematous syphilide** occurs in the throat in the form of a diffuse redness, sometimes accompanied by a slight œdema of the mucous membrane.

The **Papular syphilide** appears as moist or mucous patches in the mouth and throat, bearing the greatest resemblance to the effect produced by a very superficial cauterization of the mucous membrane by nitrate of silver. Upon the tongue the syphilitic papule forms usually round level spots which often enlarge in circumference while receding in the centre, and thus assume the annular form. The same occurs on the hard palate. In the female genitals and in places where surfaces lie in contact with each other, the mucous patches become flat condylomata, which often are converted into condylomatous ulcers, similating closely the primary affection. The secretion of the flat condylomata is in the highest degree infectious.

The **Squamous syphilide** also becomes often transformed, in favorable situations, into flat condylomata.

The **Ecthyma** is often accompanied with aphthous-like sores in the mouth, deep ulcers of the tonsils, or destructive ulcerations upon the soft palate.

The **Syphilitic tubercles** of the mucous membrane of the mouth and throat are usually not seen until ulceration has taken place. The ulcers have sharply cut edges, a yellowish purulent base with great swelling and redness around them; they spread often extensively upon the posterior pharyngeal wall; they occur also in the large intestine, especially in the lower part of the rectum and in the trachea.

THERAPEUTIC HINTS.—Mercurial preparations, Aurum, Kali bichr., Kali hydr., Laches., Lycop., Mezer., Nitr. ac., Sanguin, Thuja.

Syphilitic Affections of the Periosteum, of the Bones and Cartilages.

They are always attended with severe pains in the bones, of a boring, grinding nature, and always worse at night from evening

till towards morning, when, with a slight perspiration, they usually abate. Gradually a structural change is observable; the periosteum commences to swell, forming so-called *tophi*, and when the inflammation spreads to the bones, causing swelling of the bones (*exostosis*), which may terminate in necrosis and caries. Such structural changes attack the skull bones, which, when they are on the inside, may cause convulsions, paralysis, amaurosis and deafness. Those which attack the bones of the nose cause horrible disfigurations of the face. It also attacks the vertebræ, destroying portions of them, and the *cartilages*, although not so frequently. The cartilage of the nose is destroyed as well as the bones, and so have the cartilage of the sternum and the cartilages of the larynx been found destroyed.

THERAPEUTIC HINTS.—*Pain in the bones*, Arsen., Aurum, Fluor. ac., Guaiac., Laches., Mercur., Mezer., Nitr. ac., Phosphor., Phosph. ac., Phytol., Staphis., Stilling., Sulphur.

Tophi and exostosis, Asaf., Aurum, Fluor. ac., Lycop., Mezer., Phosphor., Phosph. ac., Staphis., Sulphur, Silic., Ruta, Sabina.

Caries and necrosis, Asaf., Aur., Calc. carb. and jod., Fluor. ac., Kali hydr., Mercur., Nitr. ac., Silic., Hepar, Lycop., Phosphor., Mezer., Sulphur.

Syphilitic Contractions of Muscles and Tendons.

These take place in rare cases, where the syphilitic virus attacks the muscles and tendons, causing plastic exudation within and around them, and thus shortening them.

Gummata in the Subcutaneous and Submucous Cellular Tissue.

These usually form at a later period, and appear as little, painless, movable kernels under the skin. They grow slowly and commence finally to suppurate, leaving deep, cicatrized holes, or chronic ulcers.

Arsen., Aurum, Bellad., Calc. carb., Carb. veg., China, Graphit., Mercur., Mezer., Phosph. ac., Plumbum, Ruta.

Syphilitic Affections of Inner Organs.

a. **Brain Affections.** They manifest themselves in various ways, as, violent headaches, hemicrania, sleeplessness, dizziness; or as hemiplegia, imbecility of mind, amaurosis, deafness, epilepsy, catalepsy, and are caused either by chronic inflammation of the membranes, or formations of tubercular masses, or syphilitic exoxtosis on the inner plate of the skull bones.

The diagnosis is difficult. We may suspect such changes, if we find a right to do so from the history of the case.

b. **Lung Affections** set in frequently in consequence of suppressed chancres, either as ulcerative processes, as bronchitis and asthma.

c. **Liver, Spleen, Intestinal Affections** are of various kinds and have been spoken of under the corresponding chapters.

Syphilis Congenita sive Hereditaria.

In some cases the child is destroyed by syphilitic infection while yet a fœtus; or it may be born alive prematurely; or be still-born at full term; or be born at full term apparently healthy, when sometime afterwards the constitutional taint develops itself.

The infection may have been transmitted, as stated before, by the semen, by the ovule, or later during gestation. The more recent the syphilis in the parents at the time of conception, the greater will be the liability to abortion. When the fœtus dies in utero, it is usually born in a state of maceration; if carried nearly its full term, it shows the syphilitic signs either on the surface of the body, or in internal organs, and invariably in the epiphysis of the long bones, where the cartilage layer is enlarged and softened, the zone of ossification is thickened, projecting with irregular prolongations into the cartilage layer, whereby the union of the two becomes less firm, so that the epiphysis is liable to separate entirely from the shaft of the bone, or the rib from its cartilage.

When the child is born alive, it usually is small, undeveloped and presents a peculiar oldish appearance, has a weak, plaintive voice, a stoppage of the nose, sore corners of the mouth, and its skin is either already covered with a rash, or shows, in a few days, papules or pemphigus. Such children perish in a short time from diarrhœa, or suppurations with all signs of marasmus.

Sometimes the only apparent symptom of a seemingly healthy child is a nasal catarrh with stoppage of the nose, and coincident with it or following soon after a macular, or oftener a papular eruption, which may be limited to a few bright red papules upon the buttocks, or cover the entire body, but especially the face, acquiring by degrees the coppery tint. By and by the nasal discharge becomes purulent and excoriates the neighboring parts, and in the mouth and throat mucous patches appear. Bad cases soon lead to destruction; mild cases may improve, but develop a most striking depression or flattening of the nasal ridge and a marked prominence of the frontal protuberances with symptoms of hydrocephalus. The children become very restless, cry a great deal, especially at night; later manifest themselves a want of proper intellectual unfoldment and striking idiosyncrasies of character, and the upper permanent incisor teeth appear as if they were scooped out at their lower surface.

The outbreak of these symptoms is very uncertain; the latest period, as stated by different observers, is at from one week to several months, occurs most frequently, however, from the fifth to the eighth week after birth. The sooner the symptoms appear, the worse for the child. If it live through the acute stage there may occur, commonly during the period of the second dentition, or at the time of puberty, especially in girls, another train of symptoms of which may be mentioned: interstitial keratitis, eruptions, serpiginous ulcerations of the skin, or affections of the bones, epilepsy, chorea, paralysis. The treatment find under Constitutional Syphilis.

DISEASES OF THE TESTES.

Hydrocele.

The testicles and epididymis are enclosed within a serous membrane, like the peritoneum, from which, in fact, it is a mere continuation. As such, it is a closed sac, and consists, like the pleura and the peritoneum, of two blades, *the tunica vaginalis propria* and the *tunica vaginalis reflexa*. Like all serous membranes, it is liable to exudation, and if that takes place, it constitutes what is called *hydrocele or dropsy of the scrotum*.

It is either a symptom of general dropsical disposition, in consequence of hydræmia, as found in old age, or in consequence of

tuberculosis or other chronic diseases, corresponding entirely to hydrothorax and ascites; or it is the result of some inflammatory or mechanical irritation, in consequence of orchitis, urethritis, or in consequence of external injuries—a bruise, a fall, a kick, etc., as found in otherwise healthy and young persons, even in children, and then it corresponds to pleuritic and peritoneal effusions. This latter may become chronic, and the secretion of serum continue so that the swelling attains the size of a head. The scrotum then appears smooth, tense, glistening; the testicle is compressed, becomes atrophied, and may gradually disappear; then it presents the appearance of a transparent bladder. In consequence of undue irritation, the testicle may grow larger, become indurated, form into cysts; the exuded fluid may coagulate, become turbid by the admixture of blood or pus globules; adhesions may form, etc. All these are circumstances by which the original nature of the disease may become deeply concealed. The exudated fluid consists chiefly of a colorless, clear or yellowish fluid, which, however, now and then becomes turbid by admixture of pigment, blood, fibrine, fat, mucus, epithelium and semen, so that it assumes different colors, greenish, dark green, brown and even black.

The presence of semen is a remarkable phenomenon, the solution of which has been found only by the latest researches of Luschka, on the appendices of the testicles. According to Luschka, there is, under the head of the epididymis, a roundish vesicle of the size of a pea, which stands in immediate connection with the seminiferous tubuli of the epididymis. It therefore almost always contains seminal fluid. The vesicle or cyst now seems, under certain circumstances, to enlarge to such a degree that it forms an encysted, spermatic hydrocele; or it bursts, and diffuses its seminal fluid into the already-existing collection of serous fluid.

In an ordinary hydrocele, the testicle always lies in the upper and posterior part of the scrotum, whilst the lower cavity of the scrotum is filled with the respective fluid. In exceptional cases, however, a previous inflammation may have caused adhesion between the testicles and the lower part of the scrotum; then, of course, the testicle is fastened down and the collection of fluids gathers above it. It is well to bear this in mind. The diagnosis rests on these points which have been detailed. In external appearance it resembles mostly a *scrotal hernia;* but is easily

distinguished from it, if we compare the history of both; the neck of the hernia, which is traceable into the abdominal ring; the impulse which is felt in a hernia when coughing; the symptoms of strangulated hernia, etc.; so that hesitation between the two is scarcely possible.

Hydroceles which are dependent upon *a general hydræmic state of the blood* must be treated with reference to this whole general state and its symptoms. Hydrocele, *in consequence of a blow*, require Arnica, Pulsat., Conium.

Those *of unknown causes*, Apis, Aurum, Calc. carb., Digit., Graphit., Iodium, Kali hydr., Mercur., Psorin., Pulsat., Rhodod., Rhus tox., Silic., Sulphur.

Orchitis, Inflammation of the Testicles.

Pathologically speaking, the inflammation may attack the testicle itself, or the epididymis, or their lining, the tunica vaginalis.

It may be caused either by external violence or by an extension of inflammatory processes of related organs, such as the prostata, the neck of the bladder, the urethra, or, what is most frequently the case, by gonorrhœa or syphilis. There is also an orchitis caused by a metastasis in parotitis or mumps.

The product of inflammation is either: 1, *A serous exudation*, especially in epididymititis and vaginalitis, and it is the same thing with the above-described acute serous hydrocele; or, 2, *A fibrous, plastic exudation*, which causes infiltration, swelling, and induration of the epididymis; or, 3, *A serous hæmorrhagic exudation* in acute specific inflammations; or, 4, *A purulent exudation*, which takes place in the parenchyma of the testicle itself.

The plastic exudation generally gives rise to chronic enlargements of the epididymis, which may reach a considerable size and hardness.

The purulent exudation may be reabsorbed, or may form abscesses, which gradually break through the scrotum. Such abscesses heal only very slowly, usually forming fistulous openings.

A genuine orchitis very much resembles an incarcerated scrotal hernia. The pain is very acute, running along the spermatic cord, causing colicky pains and vomiting. We have in such cases to ascertain where the swelling commenced. In orchitis it grows from below upwards; in hernia it comes from above down.

Sarcocele, Hydrosarcocele is a chronic inflammation of the testicles, with infiltration of the parenchymal substance, in consequence of which the tubuli seminiferi become obliterated. It is slow in growing, usually without pain, and may involve the epididymis or start from it. In appearance it is an inelastic, smooth, oval tumor which, upon pressure, does not show any sensitiveness so natural to the healthy organ. In the latter stages of its development it is sometimes accompanied with an effusion within the tunica vaginalis, constituting what is called *hydrosarcocele.* It may be the result of an incomplete resolution of an acute orchitis, or the consequence of gonorrhœa. The syphilitic form often attacks both testicles, one after the other.

THERAPEUTIC HINTS.—*Inflammation in general:* Acon., Arnica, Aurum, Bellad., China, Clemat., Euphras., Mercur., Nux vom., Pulsat., Rhodod., Rhus tox., Staphis., Spongia, Zincum; *from bruises:* Arnica, Baryta, Pulsat., Zincum; *from taking cold:* Clemat., Pulsat., Rhus tox.; *from gonorrhœa:* Cannab., Clemat., Gelsem., Mercur., Pulsat.; *looking bright red:* Bellad.; *dark red:* Rhus tox., Euphorb.; *chronic hardening and swelling:* Arsen., Aurum, Baryta, Bellad., Calc. carb., Carb. an., Clemat., Conium, Graphit., Iodium, Kali carb., Kali hydr., Lycop., Nitr. ac., Plumbum, Spongia, Thuja.

Carcinoma Testis.

The most frequent form is the *medullary cancer,* which generally attacks young persons, even children. The fibrous cancer, or *scirrhus testis,* is found more in old age.

Cancer usually attacks but one testicle. Its causes are not known. Bellad.? Carb. an.? Conium? Phosphor.? Phytol.? Thuja?

Varicocele.

This consists of a varicose enlargement of the veins of the spermatic cord, epididymis and testicle, and gives rise to a knotty swelling, which feels between the fingers like a convolution of earth-worms. It gets smaller under compression or in a horizontal position, and enlarges again on standing upright. It is almost always found on the left side, because the spermatic vein of that side has a longer and more tortuous course than that of

the right side, and is also more liable to compression by accumulation of fæces in the sigmoid flexure. The affection is therefore similar to the varicose state of the hæmorrhoidal veins, and may have similar causes. In some cases it produces no inconvenience; in others it is very troublesome, producing a drawing, dragging sensation, extending from the loins into the limb, especially when walking or standing, and in hot weather; also weakness, prostration, paleness, and great dejection of spirits.

Arnica, Bellad., Calc. carb., Collins., Fluor. ac., **Hamam.**, Laches., Lycop., Nux vom., Pulsat., Sepia, Sulphur.

Spermatocele

is a swelling of the spermatic cord and especially of the epididymis in consequence of a retention and collection of semen in persons who have been addicted to excesses in venere or masturbation, and suddenly stop this bad habit without being able to stop also their lascivious thoughts. The testicle is drawn up towards the abdominal ring, the epididymis and spermatic cord is swollen, and painful to touch, also on standing and walking. The penis is usually in a state of semi-erection. All may pass off in the course of several hours, when the mind is differently employed, but the swelling may become stationary by frequent repetitions, and then it is often accompanied with *varicocele.*

Pulsat. is often of use, also cool sitzbaths.

DISEASES OF THE PROSTATA.

Prostatitis, Inflammation of the Prostate Gland.

Primarily it is of rare occurrence, but is occasionally brought on by traumatic causes, as a blow, riding on horseback upon a hard saddle, or by sudden suppression of perspiration, excesses in venere, masturbation.

Secondary forms are much more frequent, and are then an extension of inflammatory processes from neighboring organs; for example, urethritis, stone in the bladder, gout, rheumatism. Its most frequent cause, however, is gonorrhœa, and the abuse of irritating medicines, like cubebs, balsam copaiva, turpentine, etc.

Symptoms.—Pain in the region of the neck of the bladder;

heat, pressure, throbbing in the perineum and rectum; frequent stitches from the perineum into the pubic and lumbar regions and down into the limbs. Constant desire to urinate, with annoying, sharp pains around the corona glandis; the urine, after long straining, flows slowly, drop after drop, a quantity remaining still in the bladder, and, therefore, micturition is never attended with a feeling of entire relief. Severe cases cause perfect retention of urine. The discharges from the bowels are likewise painful and difficult, especially hard stools, on account of the swollen and inflamed gland pressing upon the rectum, where it may easily be detected by the introduction of a finger per anum.

In favorable cases prostatitis ends in resolution. Badly-managed cases suppurate and form abscesses, which perforate, either into the rectum, bladder, or urethra, and discharge accordingly.

THERAPEUTIC HINTS.—**Arnica**, after injuries.
Bellad., with severe pain, or
Atrop. sulph., if Bellad. does not relieve.
Mercur., for promoting resolution.
Bellad., Canthar., Hyosc., Strammon., in case of retention of urine. (Kafka.)

Enlargement and Tumors of the Prostata.

The gland may, in consequence of infiltration or deposition of tubercles, or calcareous substances, become in whole or in part enlarged. *A total hypertrophy* may reach the size of a fist or more, whilst the normal gland is not larger than a Spanish chestnut; it may be so uniform that the normal shape of the gland remains unaltered, or it may become quite considerably deformed. *Partial hypertrophy* alters in size and shape only single lobes of the gland.

As the prostate gland surrounds the urethra, reaching, with its base, over the neck of the bladder, and with its anterior extremity to the pars membranacea of the urethra, it is obvious that an increase of its size or an alteration of its form must likewise modify the mechanical proportions and relations of the prostatic portion of the urethra, of the neck of the bladder and the ejaculatory ducts. For example, an uniform enlargement of the gland necessarily pushes the bladder further back and upwards, elongating, in this way, the involved part of the urethra quite considerably, which explains the fact, that in old people

sometimes the neck of the bladder is only with difficulty reached by the catheter.

The enlargement of a lateral lobe, or an irregular enlargement of both lateral lobes, causes irregularities in the direction of the enclosed part of the urethra, compressing it more or less here and there, thus forming a kind of zig zag passage. Or the posterior part of the enlarged lobe presses into the bladder, and thus shuts the neck of the bladder inside, or gives it an oblique turn.

The enlargement of the middle lobe or isthmus, which is the deformity most frequently found in old age, is capable of closing the neck of the bladder partially or entirely, and preventing the passage of urine in part or entirely.

Symptoms.—An examination per anum reveals the swollen gland, and, on introducing a catheter into the urethra, we find more or less obstruction in its prostatic portion. There is difficulty in urinating, which is sometimes possible only in a stooping posture with legs spread asunder; dribbling of urine, and frequent discharge of prostatic fluid during stool. The form of alvine discharges is often flat or irregular, instead of being cylindrical. Old age is particularly subject to chronic enlargement of this gland.

THERAPEUTIC HINTS, according to Lippe.

Pulsat., *inflammatory origin*, painfulness in the region of the bladder; frequent desire to urinate; *dull stitch in the region of the neck of the bladder; after micturition spasmodic pains in the bladder, extending to the pelvis and thighs; feces flat, of small size.*

Thuja, *syphilitic origin, especially suppressed*, or badly treated gonorrhœa; stitches in the urethra from behind; also from the rectum into the bladder.

Digit., fruitless effort to urinate, or discharge of only a few drops of urine, and continued fulness after micturition; throbbing pain in the region of the neck of the bladder during the straining efforts to pass the water; increased desire to urinate after a few drops have passed, causing the patient to walk about in great distress, although motion increases the desire to urinate. Frequent desire to evacuate the bowels at the same time; very small, soft stools are passed without relief.

Cyclam., in and near the anus and in the perinæum, drawing, pressing pain, as from subcutaneous ulceration of a small spot, while walking or sitting.

Selen., while sitting, and also while walking, a drop of viscid, transparent fluid presses out of the urethra, occasioning a peculiarly disagreeable sensation; the same sensation is experienced shortly before and after stool.

Caustic., pulsations in the perinæum; after a few drops have passed, pain in the urethra, bladder, and spasms in the rectum and renewed desire.

Lycop., pressing in the perinæum, near the anus, during and after micturition; stitches in the neck of the bladder and anus at the same time.

Iodium, hardness of the gland. (Kafka.)

Copaiva bals., urine is emitted by drops.

Apis, frequent desire and pressing down in the region of the sphincter.

Discharge of prostatic fluid during a stool: Agnus cast., Alum., Anac., Calc. carb., Carb. veg., Conium, Corall., Hepar, Ignat., Natr. carb., Sepia, Silic., Staphis., Sulphur, Zincum.

Fulness in the perinæum: Alum., Berber., Byron., Cyclam., Nux vom.

Sensation of heaviness in the perinæum: Copaiva, Graphit.

Pulsation in the perinæum: Caustic.

Continual desire to urinate: Amm. carb. and mur., Anac., Apis, Asar., Aurum, Bellad., Canthar., Colchic., Copaiva, Digit., Guaiac., Ignat., Iodium, Mercur., Millef., Mur. ac., Phosphor., Pulsat., Sepia, Scilla, Sulphur, Sulph. ac., Thuja.

Impossibility to urinate: Digit., Sepia.

The desire to urinate continues after micturition: Bar. carb., Bovista, Bryon., Calc. carb., Caustic., Carb. an., Crot. tigl., Digit., Guaiac., Laches., Mercur., Natr. carb., Ruta, Sabina, Staphis., Thuja, Viol. tric., Zincum.

While urinating, burning in the region of the neck of the bladder: Chamom., Nux vom., Petrol., Sulphur.

The stream of urine is small: Graphit., Oleand., Nitr. ac., Sarsap., Spongia, Staphis., Sulphur, Tax. bacc., Zincum.

Difficulty in voiding urine—must press a long time before the urine flows: Alum., Apis, Hepar, Naphthal., Secale, Tax. bacc.

Escape of urine involuntarily, drop by drop: Arnica, Bellad., Mur. ac., Digit., Petrol., Pulsat., Sepia.

DISEASES OF THE VESICULÆ SEMINALES.

The vesiculæ are two little, oblong bladders, sometimes divided into two or three branches, which lie on the posterior and inferior surface of the bladder, and consist of an external contractile and an internal or mucous membrane. They are receptacles of semen, whence the latter is ejaculated during sexual excitement. In consequence of their location near the bladder and their functional relation to the sexual organs, it frequently happens, that affections of the bladder, urethra, prostata, and testes are communicated to these vesicles. They are, like all mucous membranes, prone to inflammation and consequent derangements. Their morbid secretions mix with the semen, which loses its healthy appearance and nature. A clear diagnosis of such affections is seldom possible during life; although bloody, yellow, involuntary emissions, attended with acute, cutting, and burning pains, may lead us to *suspect* the existence of inflammation in these vesicles.

Pollutiones Nocturnæ et Diurnæ; Spermatorrhœa.

In as much as the seminal secretion of a healthy man may naturally be supposed to be a continuous one, it appears as a physiological necessity, that there should occur from time to time an overflow of semen involuntarily, when not irritated voluntarily by coition or masturbation. As long as such discharges happen at night during sleep, with erotic dreams, accompanied by erections and voluptuous sensations, and followed by a sense of relief and buoyancy, these nocturnal pollutions are certainly within the boundaries of health. They do not occur regularly even in the same individual, but vary greatly in frequency from temporary causes, or certain constitutional peculiarities. However, if they occur too often, say several times a week or oftener, and are followed next day by a general dulness and weakness, diminution of mental activity, etc., instead of buoyancy, they can scarcely be looked upon as healthy occurrences. This is still more so if they occur without erection and sensation in the night during sleep. But if they occur even in the daytime—"*diurnal pollutions*"—while the individual is awake, without the usual mechanical causes (coition or masturbation), from any trifling external cause; for instance, from dallying with a female, riding

on horseback, during evacuation of the bowels or bladder, or from lascivious imaginations, then there surely exists an irritation and weakness in the sexual organs which is pathological; for a healthy man never loses semen involuntarily when awake. Such diurnal seminal losses have also been termed **Spermatorrhœa** a rather hyperbolic expression, as a continuous flow of semen scarcely ever exists. And it should further be stated, that very often inexperienced young men, frightened by reading miserable and designing trash upon this subject, take for spermatorrhœa what is no flow of semen at all, but a secretion from the mucous membrane of the urethra, and perhaps also from Cowper's glands, or a prostatic secretion; neither of which contains any trace of *spermatozoa*, the only sign of true semen.

The principal Causes of abnormal seminal losses are *masturbation* and *excessive indulgence in venere*. In both ways the frequent irritation not only produces an excessive irritability of the sexual organs and an undue stimulation for the secretion of semen, but also an intensive excitement of the nervous system which by degrees grows into permanent overexcitability, so that ejaculations at last are not only provoked by peripheral, but also by central stimuli, such as lascivious thoughts, etc. That actual degeneration of the spinal cord can be produced by sexual excess alone is still to be proven.

Further causes of abnormal seminal losses are: *chronic inflammation of the neck of the bladder* and *the prostatic portion of the urethra*, often produced by suppressed gonorrhœa, in consequence of which a higher degree of irritability of the parts ensues; *inflammatory affections of the bladder*, but especially lythiasis; *chronic inflammation of the seminal vesicles*, especially when connected with gleet; *great length and narrowness of the prepuce*, which prevent thorough cleansing of the parts from smegma and promote undue irritation; *itching eczema on the scrotum or about the anus; habitual constipation and hæmorrhoidal tumors.*

The Symptoms which accompany abnormal losses of semen are not caused by them, but owe their origin to the same causes as produce them. Of these may be mentioned: a hypochondriacal mood, with despair of recovery, a dislike for society, and even suicidal thoughts, which are seldom executed for want of courage; or quarrelsomeness and irritableness; loss of energy and courage, depressed state of mind, impairment of memory; vertigo, headache; deafness and noises in the ears; indistinct vision;

fatigue; stiffness in limbs and back; trembling in limbs; numbness along the spinal cord, in the lower extremities, or in the fingers; or hyperæsthesia; coldness in the back or some other part; sometimes alternating with flushes of heat; palpitation, and shortness of breath; indigestion, with consequent disturbances of nutrition, such as paleness, emaciation, sallowness and dryness of skin; or pasty and bloated appearance; impotence.

Now, this gloomy picture should not be taken as applying to all or even to single cases precisely; for happily these symptoms are only partially constant and severe in cases of abnormal pollutions. A hypochondriacal mood is perhaps the most common of them all.

The termination of spermatorrhœa into insanity or epilepsy is quite unproved. On the contrary a hereditary disposition to insanity or epilepsy may be in many cases the cause of masturbation and the consequent spermatorrhœa.

The Prognosis depends upon its causes. Of these the local irritations are relatively the most favorable, while the psychical causes are deeper and more difficult to eradicate.

THERAPEUTIC HINTS.—First rule, stop the cause. This applies not only to sexual abuse, but also to those exciting causes above mentioned, which ought to be found out by the physician and serve as leading symptoms for the selection of the remedy.

Aur. met. or **mur.**, settled melancholy with suicidal mania; discharge of prostatic fluid from a relaxed penis, during stool or micturition; great sexual weakness with great lasciviousness; or strong erections which cease on the attempt to copulate; affections of the testicles and spermatic cords.

Calc. carb., after pollution, headache and backache; cold, clammy hands and feet; scrofulous subjects; shattered constitutions; sweating from any little exertion, especially on head.

Cinchona, nocturnal emissions, frequent and debilitating; lascivious fancies; after masturbation.

Digitalis or **Digitalin.**, great irritability and weakness of the genitals; after an emission a sensation in the urethra as if something were running out of it; frequent palpitation and trembling of the limbs; in conversation with strangers he commences to stammer and becomes embarrassed. Prostatic troubles.

Gelsem., weak, irritable sexual organs; emissions without erections, also during stool; genitals cold and relaxed; or profuse

warm sweat on scrotum; after suppressed gonorrhœa, orchitis, with dragging pains in the testicles.

Graphit., nocturnal emissions, with flaccid penis and without voluptuous sensation; sense of weakness in the genital organs; herpetic eruption on scrotum; after sexual abuse.

Lycop., excessive and exhausting pollutions, also without erection; afterwards burning in urethra; itching of inner surface of foreskin; soreness between the scrotum and thigh; constipation; hæmorrhoids. Impotence, with cold and shriveled penis; after masturbation.

Nux vom., after quack-medicine, wine or coffee; sluggish action of abdominal organs; constipation; hæmorrhoids; suppressed gonorrhœa; masturbation.

Phosph. ac., debilitating emissions from weakness of the parts, with onanism; during stool; hypochondriacal; distressed on account of the culpability of his indulgence. Youths who grow fast and tall; herpes preputialis, with tingling; urine turbid, with heavy sediment.

Sarsap., nocturnal emissions, with lascivious dreams, followed by pain from the small of the back down along the spermatic cords, in the morning, with general prostration; or, great anguish of mind; inability to apply himself to mental work; smoky mist before the eyes, when reading in the evening; prostration; soft, flabby muscles. The least excitement causes ejaculation of the fluid without sexual feeling. (J. B. Hunt.) Offensive odor about the genitals; herpes on the prepuce; gonorrhœa checked by cold, wet weather, or by mercury, followed by rheumatism.

Selen., nocturnal emissions with lascivious dreams, followed by weakness and lameness in the loins. (J. F. Greenleaf.) Semen thin without normal odor; prostatic fluid oozes while sitting, during sleep, when walking and of stool; itching of the scrotum.

Silic., aching in sacrum; sweat of scrotum; heat in head; burning of feet with sweat; weakness and heaviness of arms; melancholy; all worse in forenoon and before an emission, and relieved after an emission. (W. P. Wesselhoeft.)

Thuja, painful spermatic cord; suppressed gonorrhœa; renewed gonorrhœa after coition; prostatic affections; impotence; heaviness and ill-humor after emissions.

Zinc. ox., with hypochondriasis, full of fears of the consequences; nervous system shaken; restless, sleepless and generally miserable.

Besides compare:

Arnica, when coition has been practiced in a standing position lame weakness in lower extremities.

Bellad., with gleet.

Capsic., impotence, atrophy and coldness of the genitals.

Carb. veg., heartburn, acidity and flatulence.

Caustic., memory deficient; continual loss of prostatic fluid.

Cuprum., great nervousness of young men, prematurely old; cramps in the calves of the legs and feet on trying to have a connection with a woman.

Dioscorea.

Kali brom., want of sexual instinct.

Kobaltum, lewd dreams; only partial or no erections.

Mercur., after emission burning pain in back and icy cold hands.

Natr. mur., poor digestion and spinal irritation.

Nuphar., lascivious thoughts without sexual capacity.

Phosphor., nervous prostration; oppression and pain in chest; paralytic or spasmodic symptoms in extremities.

Picric acid.

Sepia, ejaculation too soon; semen watery; catarrhal affections; bloated and earthy colored face.

Sulphur, erection complete, but discharge of semen before he succeeds in inserting the penis.

Bloody emissions: Mercur., Cannab., Ledum, Sarsap.

Impotence; Sterility in the Male.

Impotence, a diminution or complete loss of the power of sexual intercourse, is always associated with either incomplete, or too short, or entirely absent erections. It may be CAUSED by: *certain congenital* or *acquired malformations* and *defects of the genital organs*, such as: absence of the penis, or considerable diminution in its length, tumors of the penis, indurations and knots in the corpora cavernosa, loss of the testicles either by castration (although cases are on record which show that the sexual act could be accomplished after castration, this quasi virile power, however, diminished more or less speedily and finally disappeared entirely), or such disease as is equivalent to their loss. It may be a symptom of certain acute or chronic diseases, such as: tabes dorsales, spinal meningitis, diabetes; or the consequence of certain medicines, if taken in too large doses and indiscriminately, among which are

best known: Camphor, bromide of potassium, lupuline, and arsenicum. It may be produced by certain mental conditions, such as: bashfulness, fear of failure, nervousness, or the absence of certain modes and ways to which they have become habituated with prostitutes and which they cannot indulge in with their wives.

A very prominent cause is sexual excess and masturbation, by which a functional weakness of the genital organs and of the nervous apparatus connected with them is brought about, in consequence of which only *short erections*, too short even for the introduction of the penis, so-called *irritable weakness*, or no erections at all, are possible under any circumstances, the so-called *paralytic form* of impotence.

A man impotent is also *sterile*, that is unable to *procreate*, even if his semen should be of a natural quality, because he cannot locate it where alone it could fructify. But *sterility* has other causes, which are:

1. **Aspermatism**, which means not only a variety of conditions *in which no semen is formed* (as certain malformation or injuries of the genital organs, absence or malposition of the testes), but also those conditions *in which the formed semen is not ejaculated*, because its passage is barred by changes in the substance of the prostate, or in the ejaculatory ducts embedded in it, or in the urethra, from whence it is diverted into the bladder. The causes of this retention of semen are strictures in different places in the seminal passages produced by inflammatory processes mostly in consequence of gonorrhœa, or wounds, or they are congenital.

2. **Azoöspermism**, in which copulation with ejaculation may be possible, but *in which either no seminal bodies are produced*, on account of an abnormal state of the testicles, or in which they are retained on account of strictures in the passages which conduct the semen, in consequence of *bilateral inflammatory processes of the epididymis* and *vasa deferentia*, a condition similar to aspermatism, only that in the latter the stricture is lower down in the genital passages.

THERAPEUTIC HINTS.—Compare the preceding chapter, especially in regard to those transient forms: Agar., Agn. cast., Baryta, Calad., Lycop., Natr. mur., Nitr. ac., Selen.

Among the new remedies: Eupat. pur., Gelsem., Hamam., Helon., Phytol., Stilling.

FEMALE GENITAL ORGANS.

Examination of the Parts.

By means of *palpation* and *percussion* of the abdomen we may be able to detect the presence, shape and consistence of abdominal tumors, and *auscultation* will serve to distinguish between pregnancy and other large tumors; the so-called uterine scuffle, which originates in the large arteries, is heard, not very seldom, in large fibroids, and also, but rarely, in ovarian tumors.

The *digital examination per vaginam* consists of the introduction of the well-oiled forefinger through the ostium into the vagina, by which we ascertain the condition of the walls of the vagina, whether they are dry, moist, sensitive, encumbered by protrusions of the rectum or bladder, or by morbid growths, etc.; the state of the anterior and posterior cul-de-sac; the position and condition of the cervix and os uteri and of the lower part of the womb. In cases of vaginal occlusion or hyperæsthesia, but especially in all kinds of retro-uterine tumors, a digital exploration *per rectum* is the most valuable aid for diagnosis.

The *bimanual* examination consists in an exploration by means of the one hand through the abdominal walls, while the forefinger of the other hand within the vagina rests on the neck of the womb. In this way the entire organ may be brought between the exploring fingers of both hands, so that its shape, consistence and mobility, etc., or the existence of any tumor within the true pelvis can easily be ascertained. This *conjoined method of examination*, as it is likewise termed, is best performed in the dorsal position on an unyielding couch. Care should be taken that the outside hand is only slowly pressed into the abdominal wall above the symphysis pubis, which is best done by taking advantage of each expiration; and by inserting the hand not too close to the symphysis, in order to avoid the pushing backward of the uterus.

Examination by means of the *uterine sound* (of which those most in use are the steel, Simpson's and Skene's sounds) consists in the introduction of a curved metallic instrument *into the cavity of the womb*, guided by the forefinger which has been inserted into the vagina. This exploration gives a measurement of the length of the uterine cavity, discloses the course taken by it and the

sensitiveness of its walls and tells whether the uterus is empty or not. This sort of examination should never be resorted to so long as there exists the slightest doubt as to the possibility of pregnancy.

Ocular examination is assisted by *vaginal specula* in order to bring the os and cervix uteri into view. There are bivalvular, trivalvular and tubular specula, of which those most in use are Cosco's or Wocher's bivalve, Nelson's trivalve and Furguson's or Mayer's tubular speculum, all of course of different sizes. For the better viewing of the posterior wall of the vagina we have Sim's duckbill, also his folding speculum and Dawson-Sim's improved speculum, instruments which the specialist may need for certain operations.

There are undoubtedly cases where an examination by either of these means may be absolutely necessary. But it is certainly beyond the lines of even medical decency to subject every woman who shows any signs of uterine disturbances at once to digital or ocular examination, especially if that woman be a virgin. It is a curse of vanity to show one's ability to handle or mishandle an instrument at the expense of an innocent or inexperienced person, and it is the highest degree of ignorance to look or feel for something what by better information we would not expect to find there, or what we should know to find without fingering. It is therefore not to be wondered at that thoughtful medical gentlemen have condemned the use of these physical examinations almost in toto. Almost—for the helping hand and the seeing eye will even here be needed in certain cases as anywhere else.

OVARIES.

Oophoritis, Ovaritis.

This affection has its seat either in the *parenchyma* (the Graafian follicles), or in the *connective tissue*, or in the *peritoneal covering* of the ovary.

If in the *glandular part* (parenchyma) the mature Graafian follicles have a milky turbidity and the cells of the membrana granulosa are in a state of cloudy swelling and subsequently break down into fine granules, the layer of the stroma surrounding the follicle is likewise inflamed. This form of inflammation occurs frequently in acute febrile diseases in which we also meet

with parenchymatous inflammations of other abdominal glands; it may cause destruction of all the follicles and so result in sterility.

If in the *connective tissue* there is hyperæmia, swelling and infiltration of this tissue which may terminate in the formation of abscesses, generally, however, results in cicatricial shrinking with consequent sterility. It is most frequently found in the puerperal period, or as an extension of a peritonitis, and in consequence of suppression of the menses.

If in the *peritoneal covering* (**Perioophoritis**) it leads to pseudo-membranous deposits upon the ovary, and to adhesions with neighboring organs. Its CAUSES are: taking cold; getting wet during menstruation; sexual intercourse during the menstrual period; onanism; or, secondarily, inflammatory processes of neighboring organs—the peritoneum, or the uterus; gonorrhœa. It is therefore most frequently found in serving girls, who are exposed to all kinds of rough influences, (scrubbing of pavements, washing, etc.,) in prostitutes, and other lewd women. Girls who have once had an attack are liable to a repetition during their menstrual periods. After the cessation of menstruation, the disposition to it ceases likewise.

Its SYMPTOMS are not at all well-marked, when the connective tissue alone is the seat of the disease. We meet with symptoms of partial peritonitis, however, if the serous covering becomes inflamed; violent, sharp, colicky pains, vomiting, fever, etc.; and so also may the bursting of a Graafian follicle be attended with inflammatory symptoms. As the ovaries lie deep in the lesser pelvis, covered completely by the small intestines, pressure downwards, from above the symphysis pubis, will reach the sore spot only when the abdominal walls are greatly relaxed. Bimanual examination or an exploration per anum may become necessary in chronic cases. We may, however, diagnosticate an acute attack pretty safely when the above-mentioned symptoms have set in during menstruation, after an exposure to cold or wet, followed by a sudden cessation of the menstrual flow. Where the inflammation spreads over adjoining organs, we find it accompanied by painful urging to urinate and to evacuate the bowels; by utero-vaginal blennorrhœas, or a numbness in the lower extremity of the affected side.

An acute attack rarely lasts longer than eight days, generally subsiding within twelve to twenty-four hours. In unfavorable cases it becomes chronic, and may terminate in the formation of serous cysts, induration of the ovary, or in suppuration.

THERAPEUTIC HINTS.—Acon., headache, backache, colic, fever, great restlessness and tossing about; after exposure to cold winds or a sudden fright during the monthly period, by which the flow ceases; painful urging to urinate and to evacuate the bowels.

Ant. crud., when menstruation has been checked by taking a bath; nausea and vomiting, white tongue; great thirst at night; alternate costiveness and diarrhœa.

Apis, right side; swelling, with stinging pains from sexual intercourse during the monthly period; numbness in the right side of the abdomen, extending into the thigh, or upwards to the ribs; scanty urine; retarded stool; cough, with soreness in the upper portion of the left chest.

Arsen., drawing, stitching pain from the region of the ovary into the thigh, which feels numb and lame, worse from motion, bending or sitting bent; burning pain in the back while lying quietly upon it; the menses consist of a thin, whitish, badly-smelling discharge; pale, yellowish face; emaciation; febrile action; thirst, with drinking little at a time; restlessness.

Bellad., hard swelling of the ovary, with stitching, throbbing pains; constant bearing down, as if everything would issue out; fever, with perspiration; glistening eyes; red face and delirium; after child-birth.

Bryon., stitching pain, worse from the slightest motion and contact; suppression of the menses, with bleeding of the nose; inclined to constipation.

Canthar., stitches, arresting the breathing; or violent pinching, pains, with bearing down towards the genitals; or great burning pain in the ovarian region; constant urging and straining to urinate, with painful discharge of but a few drops of urine, which sometimes is bloody; after suppressed gonorrhœa.

Coloc., cramp-like pain in the left ovarian region, as though the part were squeezed in a vice; colicky pain all over the abdomen, which causes the patient to bend double; pain in the left foot; worse before menstruation, which is more profuse.

Conium, chronic cases; induration; lancinating pains; pain in the mammæ before the menses, which are feeble; smarting, excoriating leucorrhœa; giddiness when turning in bed; intermitting flow of urine.

Hamam., after a blow, the ovary swollen, with a diffuse agonizing soreness over the whole abdomen; menses irregular, very painful, with exacerbation of all the sufferings at the catamenial epoch; retention of urine.

Hepar, when suppuration takes place, indicated by frequent crawls.

Ignat., disappointed love; constant running of thoughts in that direction; sighing, despondency; leucorrhœa which passes off with labor-like pains.

Iodium, when indurated.

Laches., left ovary; tensive, pressing pains and stitches; inability to lie on the right side on account of a sensation as if something were rolling over to that side; menses scanty, with labor-like pressure from the loins downward; swelling of the ovary; suppuration.

Mercur., stitching, pressive pains in the lower region of the abdomen, left side; upper portion of the abdomen distended; stool with great tenesmus; constant urging to urinate, with scanty emission of a thick, brown-red urine, causing burning in the urethra; perspiration without relief; great weakness and emaciation; nightly aggravation and restlessness; menses suppressed.

Nux vom., after previous use of different allopathic drugs.

Platina, excessive sexual desire, from an incessant tickling within the genitals; painful pressing towards the genital organs, as if the menses would make their appearance; profuse or suppressed menses, with palpitation of the heart, headache, restlessness and weeping; haughtiness.

Pulsat., after getting the feet wet; suppression of the menses, with nausea, coldness of the body, chilliness and trembling of the feet; pressure on bladder and rectum; thirstlessness, weeping, meek disposition.

Rhus tox., after getting wet, straining or lifting.

Zincum, boring pain, relieved by pressure and during the menstrual flow.

Compare Aurum, China, Clemat., Hedeoma, Iodium, Phosph. ac., Phytol., Podoph., Sabina, Sepia, Staphis., Thuja.

Hydrops Ovarii, Ovarian Dropsy; Formation of Cysts in the Ovaries.

Most of these cysts originate, according to some authors, out of a *degeneration of the Graafian follicles*, which become distended, in rare cases, even to the size of a child's head; containing a clear, yellowish, serous, or thick, limpid fluid. There may be one or several of such cysts.

The *multilocular tumors* consist of a formation of multiple-cysts, growing out of the parenchyma of the ovaries. They sometimes attain an enormous size, and contain either a serous or jelly-like fluid, which is dark if mixed with blood.

The *alveolar degeneration of the ovary* destroys all the original structure of that organ; its whole substance becomes transformed into larger and smaller cavities, which are separated by a fine tissue. Some of these cavities attain the size of a fist, while others remain quite small. At first the organ retains its roundish shape; later, by the extension of some of these cavities, it becomes uneven. The contents of these cavities is mostly a yellowish, tough, honey-like substance, though the larger ones sometimes contain a thinner fluid. This degeneration is often complicated with cancer of the ovaries.

There are yet cysts to be mentioned which, instead of a fluid, contain *hair, teeth* and *bones;* their interior walls present a structure which is quite similar to that of the cutis, having an epidermis with sudorific and sebaceous glands, and sometimes a hairy growth. Such cysts are called *dermoid cysts;* they sometimes attain the size of a walnut, or even a fist. They are, perhaps, products of ovarian conception.

There are also *fibrous, cartilaginous* and *osseous tumors* of the ovary which, like the purely cystic, may be the consequence of subacute inflammatory action in these organs.

The SYMPTOMS of ovarian cysts, in the first stage, may be identical with those of an oophoritis; but usually all such signs are wanting, and the cysts, as long as they remain small, give no inconvenience whatever. When attaining a certain size, however, they exercise a pressure upon the bladder and the rectum, causing difficulties in micturition and defecation. When pressing upon the nerves, which run down on the posterior wall of the lesser pelvis, they cause pain in the small of the back, or pain and numbness in the lower extremities; and when pressing upon the veins in the pelvis, they cause œdematous or varicose swellings on the lower extremities. At the same time we observe, in some cases, a swelling of the mammæ and a darkening of the rings around the nipples, with sympathetic vomiting and general malaise, thus simulating very closely the commencement of pregnancy. When the cysts grow further, they rise out of the pelvic cavity, and most generally the patient feels relieved of those symptoms which are caused by their pressure upon the pelvic

organs; in some cases, however, all these symptoms continue, as the cysts or portions of them within the pelvic cavity still continue to exercise the same compression upon the pelvic organs.

Increasing still more, they gradually fill the abdominal cavity, press against the diaphragm and compress the abdominal organs; the natural consequences of which are: vomiting, shortness of breath, palpitation of the heart, bronchial catarrh, disturbed secretion of urine, deficient nutrition, and consequently anæmia and hydræmia, which ends in general marasmus.

Their growth is not a steady one; they are frequently observed to increase and decrease in size periodically; the first taking place generally before and the latter after menstruation. As frequently intervening symptoms may be mentioned those of peritonitis, which are the more severe the more rapidly the cysts grow. If a cyst bursts, either by its own excessive distention, or by external violence, its contents issue into the abdominal cavity and cause a general peritonitis; or it may, in consequence of previously formed adhesions and inflammatory processes, find its way into another of the abdominal organs, and be thence discharged.

Physical Signs.—As long as the tumor remains in the true pelvis, it may be diagnosed by an examination per vaginam or rectum, where it is felt as a well-defined swelling, which dislocates the uterus in one or another direction, according to its position. The less the tumor takes part in the motions of the uterus the more sure is its diagnosis.

When the tumor rises out of the true pelvis there appears a painless, well-defined swelling over the horizontal ramus of the pelvic bones; later it inclines more towards the middle-line of the abdomen, and yields more or less, a sense of fluctuation; the distended abdomen appears arched and changes its form scarcely any during different positions of the body.

Percussion gives a complete flat sound, where the tumor touches the parietal walls, being dullest where the swelling is most prominent; thus it differs from ascites, which gives a full sound, where the distended abdominal walls appear highest; for underneath that place lie, in ascites, inflated intestines; and furthermore, the fluctuation of a cystic tumor never extends further than that portion of the abdomen which yields a flat percussion sound, because the fluid is confined in a sac, while in ascites the fluctuation is felt also where there is no flat percussion sound,

because the fluid is driven further on within the peritoneal cavity by the concussion of the palpating hand.

THERAPEUTIC HINTS.—Compare Oophoritis and Peritonitis.

Apis, sudden stitches, like bee-stings, in the tumor, or sharp, cutting pains, with scanty urine and constipation; bearing down, and pain in the small of the back, as if the menses would come on; numbness of the corresponding lower extremity; thirstlessness; pale skin; œdema; right side.

Arsen., burning pain; restlessness; anxiety; oppression; sinking of strength; great thirst, but little drinking at a time; dropsical swelling all over; pain in the corresponding leg; cannot keep the foot still.

Calc. carb., distention and hardness of the abdomen; pressure in the rectum, and bearing down in the womb; profuse and too early menses.

Canthar., burning pain; great sensitiveness of the abdominal walls; constant, painful urging to urinate and defecate; tenesmus in the bladder and rectum; wretched, sickly appearance.

China, after great loss of fluids; general anasarca; meteorism.

Coloc., a firm, elastic tumor occupies the space between the uterus and the vagina anteriorly and the rectum posteriorly, completely occluding the vagina and rendering defecation very difficult. Paroxysms of acute pain across the hypogastrium, in the sacral region and around the hip-joint when attempting to walk; the pain extends down the groin and along the femoral nerve; it is relieved by flexing the thigh upon the pelvis and always induced or aggravated by extending the thigh; but there are frequent and severe paroxysms without any provocation. (C. Dunham.)

Iodium, pressing, bearing down towards the genitals; constipation; acrid leucorrhœa, corroding the linen; dwindling and falling away of the mammæ; strumous constitution.

Lil. tigr., bearing down in the uterine region, worse walking, better holding up the abdomen with the hands; tenderness of the swollen left ovary; stinging, burning pains from ovary up into the abdomen and down the thigh; shooting pains from left ovary across the pubes; urine causes a smarting sensation; prolapsed and sensitive uterus. (E. A. Farrington.)

Lycop., painful boring stitches in the left ovarian region; pressure on the rectum and bladder; pain in the sacral region,

especially when rising from a seat; red, sandy sediment in the urine; ascites; varicose veins on the legs.

Plumbum, the patient wants to stretch the upper and lower limbs during ovarian pains. (Dr. Young.)

Podoph., tumor on right side; pain and numbness extending down the corresponding thigh. (Hawley.) Pains extend upward to the shoulder. (Seward.)

Stramon., tumor attended with some lancinating pains and hysterical convulsions. During the convulsions the patient shrinks back with fear on seeing any one. (Miller.)

In cases where proper homœopathic treatment fails to show any influence in staying the growth of such tumors, or in improving the general health of the patient, operative surgery (tapping with subsequent iodine injections, electrolysis, ovariotomy) is indicated.

UTERUS.

Endometritis, Catarrh of the Uterus, Leucorrhœa.

Always at the time of the catamenial period the mucous membrane of the uterus is found in a hyperæmic state, its overfilled blood-vessels burst and occasion what is called the menstrual flow; this normal hyperæmia might be called the physiological catarrh of the uterus. It becomes pathological when it occurs at a time when no ripe ovula are cast off. A *predisposition* to uterine catarrh lies, therefore, between the time when menstruation begins until it ceases.

Exciting Causes are, all such disorders as cause *a stagnation in the proper circulation of the blood*, as heart and lung diseases; chronic constipation, etc.; *direct irritations*, such as sexual excesses, masturbation, pessaries, etc.; or a *general weakness of the system and general morbid conditions*, such as typhus, cholera, small-pox and other infectious diseases; chlorosis; scrofulosis; tuberculosis, etc.

Its Pathological features are like those of any other catarrh: hyperæmia, swelling, dryness at first, and afterwards increased secretion of mucus. When becoming *chronic*, the mucous membrane thickens and hypertrophies, and is sometimes studded with polypous excrescences; its color turns brownish or slate-colored; the secretion attains a more or less purulent character; the folli-

cles of the portio vaginalis swell on account of the closure of their excretory ducts, while their secretion inside is still going on; they form little round bodies of the size of a hemp-seed or larger, and are known under the name of *ovula Nabothi*. Furthermore, we find, if the process lasts long enough, diffuse *catarrhal erosions*, mostly on the posterior lip of the mouth of the womb; or *follicular ulcers*, which originate in the bursting and suppuration of the above-named ovula Nabothi; and also *granulating ulcers*, which differ from the rest by their exuberant granulations, which bleed easily.

Symptoms.—An acute attack is characterized by drawing pain in the small of the back and in the inguinal region, a feeling of fulness and heaviness in the pelvis, dysuria and tenesmus. External pressure upon the lower part of the abdomen is painful. There is more or less fever. After three or four days the patient observes a discharge from the genitals, which at first is transparent and sticky, staining the linen grayish; by and by it becomes opaque and more or less purulent. In the further course of eight or ten days the fever gradually subsides, and after that the discharge diminishes until it finally ceases.

In chronic cases, the commencement is not easily ascertained. The patients have had, long before they attach much importance to it, a discharge from the womb, which varies considerably in different cases. Still it is of the same nature as that above-mentioned, staining the linen grayish, and making it stiff; sometimes, even, clots of a gelatinous mass issue forth. That is characteristic of a *uterine catarrh*. A purulent discharge is just as liable to have its source in the vagina; and if the discharge be corrosive, the presumption is that it originates there. In some cases, the os uteri closes, owing to the sticky discharge and the swollen state of the neck of the uterus; and, in consequence, a collection of large masses of mucus within the uterus takes place, which are finally expelled by labor-like contractions of the uterus —*uterine colic*. The longer the catarrh exists, the more it changes the mucous lining of this organ, and the greater, of course, must be its effect upon the monthly period. In some cases, the flow is very profuse, and in others, very scanty; almost always it is attended with more or less pain. Conception is not necessarily prevented, if the catarrh does not extend to the tubes or causes them to be closed; but it has been observed that women suffering with chronic uterine catarrh are very prone to miscarry. A

chronic uterine catarrh may be endured for a long time; but it finally betrays itself by paleness and an earthy color of the face, weakness and relaxation of the muscles, anæmia and hydræmia. The most frequent expressions of chronic uterine catarrh are hyperæsthesia, neuralgic and spasmodic complaints; all of which we find united under the popular expression of *hysteria*. The progress of the disease is always slow; and among its complications we find a chronic parenchymatous metritis, inflections of the uterus, and closure of the cervical canal of this organ, which results in hydrometra.

In regard to the diagnosis of the various *leucorrhœal discharges*, the following may be said:

Watery discharges appear during the greater part of *pregnancy*, without being injurious to the fœtus; also in connection with *hydatid moles*, where, after a certain time, moderate discharges repeat themselves off and on, accompanied by bearing-down pains; in connection with *cauliflower excrescences*, where the serous discharges are often quite copious and of a brown color; in connection with *uterine polypi*, where the watery discharges alternate with bloody ones, and profuse menstruation; in connection with *adhesion of an ovarian cyst to the Fallopian tube*, where the fluid of the cyst enters the tube and discharges slowly through the vagina.

Mucous or *purulent discharges* are more or less opaque, gluey or gelatinous, creamy or quite fluid. They all arise *from the mucous membrane* either of the *neck of the womb*, or of the *uterine cavity*, or of the *vagina*, or of the three combined. The discharge from the cervix is gluey, creamy and more profuse; from the womb it looks soapy or like glassy pieces of coagulated mucus; from the vagina it is coagulated, has an acrid reaction and contains tesselated epithelium.

Continuous purulent discharges originate in the vaginal mucous membrane, in the cervical glands of the uterus, on the surface of a cancerous or other ulcer, in suppurating membranes remaining after an abortion, in retained placenta or membranes. *Gonorrhœic* discharges are also continuous and often difficult to diagnose from leucorrhœa, if the history is wanting.

Interrupted purulent discharges take their origin in the uterine cavity, in suppurating polypi, in abscesses seated in the neighborhood of the vagina.

Sanious discharges consist of a reddish, bloody fluid, arising

from tumors inside of the uterine cavity, from organic diseases of the uterus, such as fungoid degeneration of the uterine mucous membrane, malignant ulceration of the os, from pelvic hæmatocele, when a communication exists between cyst and vagina.

Foul smelling discharges occur where the leucorrhœa is profuse and purulent, accompanied by hectic fever and general loss of strength, and where the secretion is retained for some time in the vagina by a contraction of the ostium vaginæ. In uterine cancer the discharge is always fetid.

In giving **THERAPEUTIC HINTS**, I shall unite both *uterine* as well as *vaginal catarrh*. Both are known under the popular name, *leucorrhœa* or *whites*, as the most prominent and sometimes the *only* symptom of the two.

Æsc. hipp., pain in the small of the back and hip, with a lame feeling; the pain extends from the abdomen to the small of the back, which makes it almost impossible to get up and to walk after sitting; constipation and piles.

Alet. far., in cases of debility from protracted illness, loss of fluids, defective nutrition, etc.; great disposition to abortion.

Alum., profuse, purulent, yellow, corroding discharge, worse before and after the menses; during the day only; vertigo; constipation.

Ambra, discharge only at night; thick mucus with stitches in the vagina before the discharge; pieces of bluish-white mucus.

Amm. carb., watery, burning discharge from the uterus; profuse, acrid or milky leucorrhœa; menses every fortnight, black, coagulated, profuse; weight in stomach; urine reddish; flow often interrupted; flushes.

Amm. mur., leucorrhœa with distention of the abdomen, without accumulation of wind; discharge like the white of an egg, after previous pinching around the navel; brown, slimy, painless leucorrhœa, after every discharge of urine; stools hard, crumbling.

Aralia rac., offensive discharge, with pressing-down pains in the uterus.

Arsen., discharge, dropping out while standing, and passing flatus; burning, corroding; weak persons; old women; nervous restlessness.

Aur. met. and **mur.**, chronic metritis with malposition; induration; excoriation, with great sensitiveness of vagina; utter despair.

Bapt. tinct., acrid, fetid discharges; ulceration of the os uteri and vagina; debilitated state of the system.

Bellad., acute catarrh; bearing down as if all the contents of the abdomen would issue through the genitals, which is followed by a discharge of white mucus; colicky pains coming and going suddenly.

Berber., burning and smarting after micturition, with a constant soreness along the urethra. (F. Baker.)

Borax, midway between the menses; albuminous discharge; cannot bear downward motion.

Bovista, after the catamenia; while walking, thick, slimy, tenacious mucus, like the white of an egg; also yellow, green, acrid, corrosive; during the night only.

Calc. carb., milk-like discharge during micturition, or flowing profusely only in spells; or purulent discharge with soreness and swelling of the vulva; too early and too profuse menstruation; paleness of the face; weak feeling in the chest, especially when talking; weakness in the knees; emaciation; constant cold, damp feet.

Carb. veg., discharge only in the morning, when rising; soreness and rawness in the pudendum; cold knees in bed; flatulence.

Cauloph., profuse secretion of mucus in the vagina; yellowish spot on the forehead, commonly called "moth"; bearing down with tardy or absent menses; drawing pains in lower extremities.

Caustic., weakening leucorrhœa, with too scanty or too profuse menses; discharge, particularly at night; yellow face; disinclination to coitus.

China, leucorrhœa instead of the menses; painful pressing towards the groins and anus; bloody discharge, occasionally clots of black blood; or fetid, purulent matter, with itching and spasmodic contraction of the inner parts; great weakness from loss of blood.

Coccul., flesh-colored, watery discharge, instead of the menses, mixed with a purulent and ichorous liquid; on bending or squatting down, the fluid gushes out; distention of the abdomen and pain, as of a heavy stone; on sitting down, bending, treading or any other motion, a pain, as of internal ulceration; great debility.

Collins., leucorrhœa in connection with pruritus, obstinate constipation and dysmenorrhœa.

Conium, white discharge, burning, smarting, excoriating; suppression of the menses; itching at the vulva; contractive, labor-

like colic, from both sides of the abdomen; weakness and lameness in the small of the back and subsequent lassitude; old maids; hysteric paroxysms; swelling and induration of glands.

Ferrum, in chlorotic patients, thin, watery discharge, at first smarting and corroding; palpitation of the heart; earthy, yellowish face; painfulness of the vagina during an embrace; swellings and indurations in the vagina.

Gelsem., white discharge; feeling of fulness in the hypogastrium; aching across the sacrum.

Graphit., perfectly white discharge, very profuse, especially in the morning on rising from bed, also in gushes by day or night; scanty menses; irritable skin; weakness in the back and small of the back, when walking or sitting.

Hamam., especially in those profuse discharges which simulate a hæmorrhage and constitute a drain on the system as severe as a bleeding; soreness of the abdomen.

Helon. has been recommended in cases of general atony, anæmia and torpid condition of the system.

Hydrast., tenacious discharge; erosions and superficial ulceration of the cervix uteri and vagina; great sinking and prostration at the epigastrium, with violent and continued palpitation of the heart.

Ignat., violent, crampy pressing in the region of the womb, resembling labor-like pains, followed by a purulent, corrosive discharge; mild dispositions who bear sufferings, even outrages, without complaining.

Iodium, old leucorrhœa, most abundant at the time of the menses, rendering the thighs sore and corroding the linen; dwindling and falling away of the mammæ; goitre; induration of cervix and womb.

Kreosot., leucorrhœa before and after the menses, especially when standing and walking, not when lying or sitting; the yellow discharge is acrid and corroding, offensive, causing redness and itching in the vulva; menses too early, too profuse and too long.

Laches., leucorrhœa before the menses, copious, smarting, slimy, stiffening and staining the linen greenish; the menses appear at the regular time, but are too short and too feeble; the abdomen is hot and tender to touch; feels bad after sleeping.

Lil. tigr., abundant, thin, excoriating discharge, staining the linen brown, worse P.M.; bearing down relieved in lying down or

sitting, or pressing with the hand against the parts; frequent micturition with smarting or burning in urethra afterwards; depression of spirits; pain, distress and fluttering of heart; menses flow as long as she keeps moving; sometimes come on too early and are scanty; depression of spirits; feels all the time in a hurry without accomplishing anything.

Lycop., profuse, greenish, thick discharge, not constantly but in spells, which are always preceded by a sharp cutting pain in the hypogastrium; pale face, with frequent flushes of circumscribed redness of the cheeks; discharge of wind from the vagina; the least quantity of food fills her up to the throat; jerking of the lower extremities.

Magn. mur., early in the morning after urinating and after stool; constipation.

Mercur., inflammation of the genitals; discharge of various nature, always worse at night; gonorrhœa; syphilis.

Murex purp., watery, greenish or thick bloody discharge; profuse and too early menses; increased sexual desire.

Natr. mur., leucorrhœal discharge after contractive colic, pressing downwards, early in the morning, at night, when walking; itching and soreness of the genitals; cutting pain in the urethra after micturition; yellowness of the face; and especially after local applications of nitrate of silver.

Nitr. ac., mucus—which can be drawn out—flesh-colored, greenish, cherry-brown, fetid; after mercurial treatment.

Nux vom., fetid discharge, tinging the linen yellow; after all sorts of allopathic nostrums.

Pallad., pain in right ovary; urgency to urinate with scanty emission, and sensation of weight and bearing down in pelvis, relieved by lying down; prolapsus uteri; forgets every pain in society, but is worse next day; attaches great weight to other people's opinions; likes to be flattered.

Phosphor., in consequence of chlorosis; watery slime, especially during or instead of the menses; acrid, smarting, corrosive, drawing blisters.

Platina, during daytime; genitals excessively sensitive; can't bear to be touched; will go into spasms from an examination; will almost faint during intercourse; or excessive sexual desire; haughty disposition, or low-spirited.

Podoph., discharge of thick, transparent mucus, attended with constipation and bearing down in the genitals; prolapsus uteri and ani.

Pulsat., burning discharge, thin and acrid, milky, thick and white, without pain; when lying, or before and during the menses, which are scanty; inclination to looseness of the bowels; chilliness; thirstlessness; peevishness; sadness; mild and tearful.

Sepia, in the climacteric period; during pregnancy; during puberty, when there is a sense of pressure and bearing down in the pelvis, stinging pain in the ovarian region, frequent urging to urinate, and itching in the genital organs; painful coitus, little sexual desire, the discharge is of a varied nature, thick, creamy or yellowish, bland or excoriating, offensive, worse during the day and after coitus.

Silic., acrid, excoriating discharge; or milky, in paroxysms, with cutting in the umbilical region; frequently, also, discharge during micturition.

Sulphur, discharges of all sorts, mild and excoriating; in most chronic cases, just as in all other chronic catarrhal affections; burning of the soles of the feet, and heat in the crown of the head; too much animal heat; feeling of faintness, with strong craving for nourishment, about eleven o'clock every forenoon; vulva sore, burning and smarting.

Parenchymatous Metritis.

In its *acute form* it is of rare occurrence, and consists of an inflammatory process of the entire substance of the womb, including often both the mucous lining inside and the peritoneal covering outside. The uterine substance is tumefied, infiltrated with serum and hyperæmic.

Its most frequent causes are irritating applications, injections of too hot or too cold water in the vagina, or intra-uterine injections, pessaries, the introduction of the sound, etc.; also, "catching cold," especially during the menses, etc.

Commencing with a chill which is followed by fever-heat, it is characterized by a deep-seated pain in the region of the uterus and an acute pain in the peritoneal covering, greatly increased by pressure, or movements, such as turning, walking, standing, coughing or straining at stool. Manual examinations are scarcely endurable. If it commences during the menstrual period, it causes suppression of the flow, or at times flooding. It is often associated with ischuria, diarrhœa and tenesmus, nausea and in rare cases with vomiting. Uncomplicated cases may pass over

in the course of several days; a termination in an abscess is of rare occurrence.

The *chronic form* of parenchymatous metritis is also known under the name of *infarction of the womb*, and consists of a *hyperplasia* of the *connective tissue* of the uterus, out of its muscular tissue; it is accompanied by a variable degree of sensitiveness. The womb is always enlarged; its substance succulent and reddish, tumefied and hyperæmic; the os is generally broad, and the lips are swollen and elongated, often ulcerated.

Its Causes are of a widely different nature. Only rarely it develops out of the acute form, and then only when the organ by some cause or the other has been prevented from undergoing a complete restitution into its normal state. By far the most frequent origin lies in a defective retrograde evolution of the puerperal uterus in consequence of too early leaving the bed and assuming house-work again; or in consequence of retained secundines, or too early sexual intercourse, etc. This applies also to miscarriage and criminal abortion.

Another variety of causes must be looked for in all those irritations which produce active hyperæmia of the uterus, such as excesses in venere, fraudulent cohabitation and masturbation; also cauterization of the os by nitrate of silver or other means; and in all those conditions which produce a venous stasis in the organ, such as retroflexion and prolapsus, adjacent tumors, retention of urine in the bladder, etc.

Its Symptoms are not in all cases very characteristically developed; but as a rule we meet with frequent repetitions of acute and subacute exacerbations of at least some of the following symptoms: pain in the sacral region, in the abdomen, a sense of weight and bearing down in the pelvis, leucorrhœa, menorrhagia, constipation and frequent urging to urinate; pain during stool, or coitus. During the menstrual period all the symptoms are aggravated. Gradually digestion and appetite begin to fail, and a whole train of hysterical symptoms develop, such as various kinds of pain in the lumbar region and lower extremities, vaginodynia, coccygodynia, paralysis of different organs, etc.

It may bring on sterility, but not necessarily; is often complicated with endometritis, ovaritis, perimetritis and displacements, and terminates after the age of fifty at times in cicatricial induration of the womb. By means of the conjoined examination the uterus is found to be enlarged and its sensitiveness increased,

especially during the periods of aggravations. The sound reveals an elongation of the uterine cavity.

The disease is very tedious, but not dangerous to life. If the uterus cannot be entirely restored to its normal state, the sufferings at least can be greatly relieved by homœopathic treatment.

THERAPEUTIC HINTS.—Compare Uterine Catarrh, Peritonitis and Displacements.

Acon., high fever; dry skin; intense thirst; great restlessness; fear of death, and predicting the hour of death.

Arnica, when induced by external violence.

Arsen., burning pain; indescribable anguish and restlessness; sudden sinking of strength; burning thirst, drinks often, but little at a time; cold drinks make her worse; burning in the veins; aggravation about midnight.

Bellad., violent pains by spells; clutching pains, as if something with nails were clawing the intestines together; meteorism, with eructations; great sensitiveness and heat in the abdomen; painful bearing down in the pelvis towards the genitals and the rectum, with constant, ineffectual desire for stool; suppression of the lochial or menstrual discharge, or else vitiated, fetid discharge. Congestion of the head, with delirium, redness of face, and throbbing of the carotid arteries; drowsy dozing with startings, or drowsiness, with inability to go to sleep.

Bryon., wants to lie perfectly still; the slightest motion causes pain; in the head splitting pain; in the bowels, limbs and body stitch-like pain; great dryness in the mouth, without thirst, or else great thirst, drinking tumbler after tumbler; perspiration in short spells, and only on single parts of the body; constipation.

Calc. carb., fat persons, and those whose menses are too profuse and return too soon; they sweat easily about the head, and are troubled constantly with cold and damp feet. Chronic infarction of the womb.

Canthar., constant painful urging and tenesmus in the bladder; likewise, in worst cases, when the patient lies unconscious with her arms stretched out along the side of her body, interrupted by sudden starting up, screaming, throwing about the arms and even convulsions; all signs of erosions and ulceration of internal organs.

Cauloph., insomnia; paraplegia; atony and relaxed condition

of the uterus; hysterical spasms; irregular menstruation; excessive uterine hæmorrhage. (M. M. Eaton.)

Chamom., great agitation of the nervous system; she seems beside herself, with red face and heat all over; she is ill-humored, and can scarcely restrain herself to treat people with civility; sometimes one cheek red and the other pale; after fits of passion.

Coloc., colicky pains in the bowels, with deadly color of the face and bending double; worse after eating or drinking; partial heat, and partial coolness of the skin, with quick pulse, vomiting and diarrhœa; bitter taste in the mouth; after indignation.

Conium, swelling of the breasts; stitches in the breast, mostly at night; induration of the cervix, with sharp pains in the part; acrid leucorrhœa; prolapsus uteri. (M. M. Eaton.)

Crocus, black stringy discharge; rolling and bounding in the abdomen, as from a fœtus; stitching in abdomen arresting respiration.

Gelsem., hystery; hyperæsthesia of a part of the body; tendency to hemiplegia; confusion of mind; sleeplessness; spasms; fever, without thirst, intermitting; nervous exhaustion. (M. M. Eaton.)

Hyosc., typhoid state; either complete apathy, or else great excitability, spasms, jerkings, delirium, wild staring, throwing off bed clothes, making herself naked; bright red clots after child-birth.

Kreosot., putrid state of the womb after child-birth; confounding ideas; loss of memory; thinks herself well; discharge of dark, offensive blood from the womb.

Laches., constantly lifting the bed-clothes from the abdomen, on account of uneasy feeling caused by it; the pain in the uterus is relieved by a flow of blood for the time being, but returns soon afterwards; in bad cases, unconsciousness, livid face, repeated shaking chills; skin alternately burning hot and cold; abdomen distended; lochial discharge thin, ichorous; stool and urine suppressed.

Mercur., inflammation of the genital organs and ulcers; moist, soft tongue, showing the imprints of the teeth, accompanied occasionally with great thirst; profuse sweat without relief; all worse at night.

Nux vom., after taking cold, or using various kinds of drugs; in chronic cases, with bearing down into the vagina and towards the os sacrum; constant urging to urinate; constipation.

Phosphor., fair, graceful women; after frequent pregnancies; pyæmic state and inflammation of the veins.

Pulsat., after getting the feet wet; frequent chilliness; thirstlessness; deficiency of milk; suppression of the lochial discharge; mild, tearful disposition.

Rhus tox., constant restless moving; can't lie still; dry tongue, with red tip; red rash on the breast; powerlessness of the lower limbs; the lochial discharge turns bloody again; typhoid symptoms.

Sabina, in metritis hæmorrhagica.

Secale, putrescence of the uterus; abdomen distended, not very painful; discharge from the vagina, brownish, offensive; ulcers on the external genitals discolored and rapidly spreading; burning hot fever, interrupted by shaking chills; small, sometimes intermittent pulse; great anguish, pain in the pit of the stomach, vomiting decomposed matter; offensive diarrhœa; suppressed secretion of urine; the skin is covered with petechial and miliary eruptions, or shows discolored, inflamed places, with a tendency to mortification; the patient lies either in quiet delirium, or grows wild with great anxiety and a constant desire to get out of bed.

Sepia, painful stiffness in the uterine region; bearing down; sense of weight in anus; sense of goneness in abdomen; yellowish spots in face.

Sulphur, frequent weak, fainty spells, especially before noon; bearing down, especially on standing; leucorrhœa; soreness of genitals.

Ver. alb., if commencing with violent fits of vomiting and diarrhœa; hot body; cold extremities and deadly pale face, covered with cold perspiration; delirium and great anxiety; suppressed lochial discharge; nymphomania.

Ver. vir., congestion of pelvic organs, tenderness of uterus; fever; heat; restlessness; palpitation of heart; local or general hyperæsthesia. (M. M. Eaton.)

For the *chronic form*, Eaton recommends: Ars. jod., Merc. jod., Phytol., Ferrum, Merc. cor., Kali hydr., Nux vom., Ars. alb., Secale, Ignat., Iris vers., Hyosc., Ver. vir.

Hydrometra, Hæmometra, Partial or Total Closure of the Womb.

In consequence of the just considered inflammatory processes, it happens now and then that exuberant granulations of the

mucous lining or cicatrization of ulcers form adhesions within the neck of the uterus and thus cause a partial or total closure of its mouth. The same result may be produced by pseudo-formations within the womb, or certain flexions of the cervix uteri. In such cases it is obvious that any secretion within this organ either can not escape at all, or only with great difficulty, and under certain favorable circumstances. The secretion collects and distends the uterus sometimes to a very considerable size. This distention causes the mucous lining to grow thin, and its glandular structure, which naturally secretes mucus, to disappear; it now approaches the nature of a serous membrane, and secretes a serous fluid instead of mucus. Thus originates **Hydrometra**, or *dropsy of the womb.*

Hæmometra it is called, when *blood*, instead of serum, collects in the womb, in consequence of a partial or total closure of its mouth. This takes place in women who still menstruate; or the occlusion is a congenital imperforation of the organ. In the first instance it is always attended with contractions of the womb, labor-like pains, or uterine colic at the period of menstruation, which may succeed in cases of a partial closure, to press the collected fluid out in gushes; in the latter case the menstrual discharge does not take place at all. The existing trouble may be suspected when repeated menstrual periods pass by without any flow, although the patient feels all the symptoms of it: periodical colicky contractions; bearing-down sensation; and all the rest of the symptoms of amenorrhœa and dysmenorrhœa. The abdomen commences to enlarge above the os pubis. Only by a physical examination can we discover the occult complaint.

THERAPEUTIC HINTS.—It is clear that, if homœopathic treatment of those inflammatory processes could not prevent adhesions and closure, medicines will not be likely to unclose them. Such cases require surgical treatment.

Displacements of the Womb.

The womb is by no means fixed immovably within the pelvic cavity; its fundus has almost entire freedom of motion antero-posteriorly; the round ligaments having their insertion in soft parts, allow very considerable excursions backwards. The cervix is more firmly connected, but only to the unstable bladder

in front and to the rectum behind. The vagina too gives no firm support, but follows the movements of the cervix. Only *considerable* lateral motion is prevented by the lateral ligaments. It is, therefore, not very strange, that displacements of this organ should frequently occur. Even within the boundaries of physiological correctness its position is greatly influenced by the varying contents of the bladder and rectum. A full bladder presses it back, an empty bladder allows it to fall forward, and so also has the full or empty rectum, though in less degree, a certain influence upon its position.

Anteversion and Anteflexion.

In *anteversion* the entire organ inclines forward, has, so to say, fallen upon the bladder which it compresses, while neck and mouth point straight backward. There is but slight bending between neck and body, or none at all. This form is always complicated with metritis, and when it exists in any considerable degree, it is accompanied by pain in the abdomen, hæmorrhages, leucorrhœa, urinary difficulties, neurosis of the rectum and hysteria. It is easily detected by digital per-vaginam and conjoined examination.

In *anteflexion* the body and cervix form an angle, the body having fallen down and forward upon the bladder, while the cervix retains its position in the vagina, or is slightly pointing backwards. This form is usually attended with *dysmenorrhœa*, in consequence of the obstruction to the menstrual flow at the point of flexion. The pain begins before the appearance of the menstrual discharge, which has to be driven out by strong contractions of the womb, causing violent colicky pains, ending usually with a copious flow. There is also difficulty of conception, the semen being prevented from entering the womb at the point of flexion, and frequent desire to pass water on account of the pressure of the womb upon the bladder. It may be complicated with metritis, perimetritis and endometritis. Here too digital and conjoined examination will reveal the nature of the disorder.

Retroversion and Retroflexion.

In *retroversion* the uterus dips backward towards the rectum and its neck and mouth point forward toward the symphisis, and in its most exaggerated form the uterus may be completely turned

over, the os looking directly upward. Slight degrees of this form may be free of symptoms; inveterate cases may be complicated with chronic inflammation.

In *retroflexion* the body and cervix form an angle, the body having fallen backward toward the rectum, while the cervix retains its position in the vagina, or is slightly pointing forward towards the symphisis. This form is more apt to be attended by hæmorrhages than by dysmenorrhœa, and occurs as a general thing most frequently in women who have borne children; it is further characterized *by a pain in the lower part of the spine;* by paralytic or neuralgic symptoms of the lower extremities or elsewhere, in consequence either of direct pressure upon the motor nerves, or in consequence of reflex action; by great irritation of the nervous system, showing itself as emotional, moral, or intellectual disturbances; by urinary troubles, and disturbances in the function of the rectum.

The Diagnosis of retroversion and retroflexion can usually be made out by digital examination per vaginam et rectum and by the conjoined method; only rarely it will be necessary to introduce the sound, which by no means is so free of danger as seems to be supposed by many.

Prolapsus and Procidentia.

In *prolapsus* the uterus slips downward into the vagina, approaching gradually with its os, the mouth of the vagina. The uterus standing in its normal position, about four inches above the vaginal entrance, its descent is one of degrees before it reaches the mouth of the vagina, and as it is fastened to adjoining parts it drags along in its course downward the bladder, the ovaries, the Fallopian tubes, the small intestines, the walls of the vagina and in some instances the rectum and portion of the colon.

I am entirely of the same opinion as is expressed by Dr. Guernsey in his work on obstetrics that "the peritoneum is the true uterine supporter," and "that the uterus can sink in the pelvis only so far as it is permitted by the relaxation of the peritoneum, its grand suspensory ligament." Recent authors come nearer and nearer to this same view. So says Schroeder: "the predisposing cause will almost invariably be found to consist in a relaxation of all the pelvic viscera," and M. M. Eaton: "the uterus is sustained mainly by the folds of the peritoneum constituting the

broad ligaments, the cellular tissue surrounding it and the vagina, and by atmospheric pressure coming in through the vagina."

The predisposing relaxation of the peritoneum being present, usually in consequence of some general weakness of the system or a sudden fright, any pressure from above, such as tight lacing, straining or heavy lifting, long-continued standing, the puerperal condition, etc., or insufficient support from below, such as lacerations of the perineum, will no doubt facilitate the descent of the womb.

Symptoms.—In those rare cases where from a violent cause a sudden descent takes place, we have severe abdominal pain, fainting and profound nervous shock. The gradual descent causes: bearing and dragging-down pain in the pelvis with pain in the small of the back, which is worse on standing, walking, lifting or doing any kind of bodily work, and better on lying down and resting; frequent desire to urinate and often inability to do it on account of the bladder being dislocated also; difficulties in defecation and a number of nervous symptoms known under the name of hysteria. Digital examination reveals the organ more or less far down in the vagina, resting in some cases upon the perineum.

In *procidentia*, which is a complete prolapse, the uterus escapes through the vagina and lies either in part or wholly outside of the external genitals between the thighs. The vagina having become inverted, covers the protruded organ, and drags down in its cavity the bladder and rectum, in consequence of which a retention of urine in the drawn down portion of the bladder (diverticulum) and difficult defecation are necessarily produced.

The Diagnosis of this trouble can hardly fail to be correct if an examination by inspection and palpation is properly conducted.

Inversion of the Womb.

By this we understand a turning of the uterus inside out. It can only take place when the organ is greatly enlarged, for instance, during parturition when the fœtus is suddenly expelled, or afterwards upon undue pulling at the cord to deliver the placenta, or in cases of tumors, polypi, etc., at its fundus, which have softened the fundus and by their weight draw it down within the uterine cavity, dragging, by degrees, the uterine walls after, until

at last a complete eversion is established. This process is often accelerated by uterine contractions to expel the foreign body. In the normal, unimpregnated uterus inversion never takes place.

The degrees of inversion are as varied as those of prolapse, from a mere depression of the fundus into the uterine cavity, to a complete turning inside out and protrusion of the entire organ outside of the vulva.

Its SYMPTOMS are usually grave hæmorrhages, shock and urinary difficulties, but in some cases it is borne without any remarkable disturbance of the system.

THERAPEUTIC HINTS.—Many cases of these various kinds of displacements require, like hernia and other dislocations, *taxis* to reinstate the organ into its natural position; others yield easily to well-chosen remedies. If taxis is necessary, it ought to be executed with the utmost care and gentleness, and, if possible, by the hand alone. It is not necessary, nor even likely, in many cases, that we should succeed in one effort at restoration; it took time for displacement; allow time also for replacement. With several gentle efforts, persistently followed up at reasonable periods, much more may be gained, than by one grand attack with ether and chloroform, and all kinds of instruments. He is the greatest artist who accomplishes most by the simplest means. In *anteversion* or *anteflexion*, place the patient on her back, and elevate the pelvis; steady with one or two fingers of the left hand, introduced into the vagina, the cervix, and with the right hand try to get under the fundus above the pubis through the relaxed abdominal walls, and force it gently upward and backward. In *retroversion* or *retroflexion*, place the patient on her left side or in the knee-chest position, raise the uterus gently by the introduced fingers of the right hand, and exercise at the same time upon the neck, which points towards the pubis, a steady pressure in a backward direction. The other hand may help either per rectum or through the abdominal walls in forcing the fundus forward. In *prolapsus* and *procidentia*, place the patient on her side or back, with the pelvis elevated, and push the organ gently upwards and in the direction of the natural curve of the pelvis, lest it might result in an artificial retroflexion by being forced against the sacrum. In *inversion*, the fundus of the womb must be pressed back again through the os, and the entire organ replaced—a work sometimes very difficult to accomplish, especially in chronic cases, when it properly belongs in the domain of surgery.

Some chronic cases of displacement are irreducible in consequence of adhesions with neighboring organs. In all cases of displacement, one of the first requirements for success is the removal of all pressure upon the womb from above, as is exercised by corsets, tight lacing, etc.; supports from below by pessaries and supporters of all kinds have seldom proved themselves of great use, and often decidedly injurious; rest, in a suitable position, with hips elevated, and continued for some time after replacement, is often all that is needed.

To secure the staying in place of the womb, we must so select a remedy that it fits the peculiarities of the individual case; it will certainly restore the necessary tonicity of the peritoneum.

As regards **SPECIAL HINTS**, Drs. Guernsey and Eggert have made valuable contributions. Compare them if the following do not suffice.

Acon., after a sudden fright; also when inflammatory symptoms prevail. Agonizing pain during the menses, with tossing about. Fear of death.

Agar. musc., prolapsus after cessation of menses; bearing-down pain, almost intolerable.

Amm. mur., pain as from a sprain in the groin, obliging one to walk crooked; menses appear too soon, with pain in the belly and small of the back; they flow more abundantly in the night; discharge of a quantity of blood with the stool during the catamenia.

Argent., pain in the small of the back, which extends towards the front and downwards; pain in left ovary and loins.

Arg. nitr., prolapsus, with ulceration of os or cervix uteri; painful coition, with bleeding from vagina.

Arnica, after a bruise or concussion, which leaves a bruised and sore feeling in the lower part of the abdomen, so that she cannot walk erect.

Aurum, after lifting a heavy load, a sense of weight in the pelvis, with ischuria and constipation, worse at each menstrual period; great dejection of spirits; longing for death, increasing to a desire for self-destruction; or vehement, the least contradiction excites her wrath.

Bellad., pressing early in the morning, as if all the contents of the abdomen would issue through the genital organs; drawing pain in the small of the back downwards; flow of blood between the periods; great dryness of the vagina; frequent, unsuccessful

desire to urinate or to evacuate the bowels; only a few drops of urine are discharged from the bladder, and some mucus from the rectum; the uterus comes down when straining at stool; or while urinating, and rises again on walking about; back aches as if it would break; dizziness; roaring in the ears; congestion to the head.

Calc. carb., pressing on the uterus; aching of the vagina; stinging in the os uteri; the menses appear too soon, and are too profuse; milk-like leucorrhœa; inclination to perspire easily about the head; great liability to strain a part by lifting; easily tired by bodily exertions; in walking up stairs she feels dizzy and entirely exhausted; even talking makes her weak; great inclination to sigh; she cannot get her breath long enough; great susceptibility to catch cold; the feet feel most of the time damp and cold, or else the soles of the feet are burning hot; great desire for hard-boiled eggs; big-belliedness; scrofulous diathesis.

Calc. phos., every cold causes pains in the joints, and in other places where the bones unite and form a symphysis or suture.

Cauloph., retroversion; menstrual colic; congestion and irritability of uterus; leucorrhœa profuse, mucous.

Chamom., abortus; colicky pain and bearing down, with frequent desire to urinate; frequent discharge of coagulated blood, with tearing pains in the veins of the legs, and violent labor-pains in the uterus; she is inclined to be quarrelsome and angry; can hardly stop talking about old vexatious things.

China, general weakness in consequence of loss of vital fluids, either by hæmorrhages, profuse diarrhœa, or debilitating illness; great disposition to sweat during motion and sleep; feels worse from exposure to the slightest current of air; all pains are worse from slightest touch.

Conium, pain in the mammæ before the menses; pressure from above downwards, and drawing in the legs during the menses; feeble or suppressed menses; sterility; smarting, excoriating leucorrhœa; the flow of urine suddenly stops; cough during pregnancy; cough worse at night, and when lying down; vertigo, worse when lying down, or loooking round, or going down stairs; induration of the urine in the mammæ or other glands.

Ferrum jod., retroversion and consequent pressure upon the rectum, that she can neither stand nor walk; constant tenesmus, with frequent white slimy stools; scanty, deep-colored urine; nervous and hysteric spasms; scrofulous diathesis.

Hydrast., nosebleed before menses; backache and headache before and during menses; discharge like white of egg after menses for ten days with great sexual desire, although coition is painful; after these ten days follows acrid, corroding leucorrhœa with great irritableness and aversion to coition; at times profuse discharge of hot water from the womb. Constant desire to pass water, with relief after passing it; constipation, dry, lumpy feces are followed by a matter like white of egg. After eating, regurgitation of food by the mouthful without nausea, with nervousness, irritability and headache; epigastric region tender to touch and a feeling as of a tight band around the waist, worse at night than in the morning; cannot sleep until after midnight. Prolapsus uteri with indurated os. (C. W. Boyce.)

Ignat., violent crampy pressing in the region of the uterus, resembling labor-pains, followed by a purulent, corrosive leucorrhœa; the menses are scanty, black and of a putrid odor; she seeks to be alone, is brooding to herself, and full of grief; all her pains are aggravated by drinking coffee or smelling tobacco smoke; gone feeling in pit of stomach.

Kali carb., pain in the small of the back, as though it were pressed in from both sides, with labor-like colic and leucorrhœa; also during the menses; the pains in the bowels are apt to recur about three o'clock every morning; bloated face in the morning, especially between the eyebrows and upper lids; great dryness and itchiness of the skin; great tendency to start when being slightly touched.

Laches., just as patients with a Lachesis-sore throat cannot bear anything touching their neck, so do women afflicted with womb diseases constantly pull their dress from off the abdomen; violent labor-like pressing from the loins downwards during the menses, which are scanty; palpitation of the heart, with numbness in the left arm; constant feeling of something in the throat which she cannot swallow down; feeling of a ball rolling in the bladder or abdomen, or in both places; climacteric period.

Lil. tigr., feels as though she would drop asunder, must press with hand against vulva; worse in standing and sometimes when recumbent: frequent ineffectual urging to urinate and defecate. Menses scanty, flowing only as long as she is moving about; leucorrhœa profuse and corroding; she feels always in a hurry, yet cannot accomplish anything.

Lycop., chronic dryness of the vagina; pressing through the

vagina on stooping; chronic suppression of the menses after fright; incarcerated flatulence; varicose veins on the lower extremities; jerking and twitching of single limbs or of the whole body, sleeping or waking; always wakes up very cross.

Mercur., peculiar weak feeling in the abdomen, as though she had to hold it up; close above the genital organs a sensation as if something heavy were pulling downward, accompanied by a pulling pain in both thighs, as if the muscles and tendons were too short. During the menses red tongue, with dark spots and burning; salt taste in the mouth; sickly color of the gums, and the teeth are set on edge; great tendency to perspire; all the symptoms worse at night; inexpressible feeling of some internal, insupportable illness.

Natr. mur., pressing and pushing from the side of the abdomen towards the genital organs early in the morning; she has to sit down to prevent a prolapsus uteri; dryness of the vagina and painful embrace; burning and cutting in the urethra after micturition; headache on waking every morning; faint, weak voice, and exhaustion from talking; after abuse of quinine, or the local application of nitrate of silver.

Nitr. ac., violent pressing in the hypogastrium, as if everything were coming out at the pudendum, with pain in the small of the back, through the hips and down the thighs; she feels so weak that she loses breath and speech. Inclined to looseness of the bowels; most violent, cutting pain after an evacuation, lasting for hours; she feels, on the whole, better, when riding in a carriage.

Nux vom., prolapsus after straining by lifting, or after miscarriage; constant, painful pressing and burning in the uterine region; pressive pain in the small of the back, worse when turning in bed; drawing in the thighs; constant, unsuccessful urging to stool and constant desire to urinate; the patient wakes after midnight and lies awake for hours, then falls into a heavy sleep again, constantly dreaming until late in the morning, when she feels disinclined to rise. Always the first remedy after allopathic drugging.

Platina, great heaviness, pressing in the genitals, extending through the groins as far as the small of the back; profuse menses; great sensitiveness of the parts, with pressing from above down; internal chilliness and external coldness; constipation; feeling of numbness and rigidity here and there; also

with trembling and palpitation of the heart; haughty disposition.

Podoph., prolapse from overlifting or straining and often parturition; great costiveness; frequent micturition; weakness and soreness of back, especially after washing; prolapsus ani.

Pulsat., chilliness and paleness of face; bad taste in the morning and dry tongue without thirst; is easily moved to tears.

Rhus tox., after a strain or hard labor; she feels worse after any long walk; the pain in the small of the back is relieved by lying on a hard couch.

Secale, after parturition; weakly, thin women.

Sepia, pressing in the uterus, oppressing the breathing, from above downwards, as if everything would come out of the vagina, accompanied with colic; she had to cross her limbs to prevent it, followed by a discharge of jelly-like leucorrhœa; sense of weight in the rectum not relieved after stool, slow and difficult evacuation from the bowels, although the excrements are soft; pot-belliedness; yellow saddle across the bridge of the nose; gone feeling in pit of stomach, great weakness, tiredness, despondency and disinclination to move.

Sulphur, weak feeling in the genital organs and pressure on the parts; troublesome itching of the pudendum, with pimples all around and burning in the vagina; she was scarcely able to sit still; the menstrual blood is thick, black, and so acrid that it makes the thighs sore; burning and smarting leucorrhœa; sudden, imperative urging to urinate to prevent an involuntary flow; weak, fainty, between 11 and 12 A.M., must have something to eat; restless and sleepless nights; or heavy sleep which exhausts her; heat on the top of the head with cold feet; always feels too hot, especially her feet, which compels her to put them from under the cover; walks stooping; all the symptoms worse while standing; psoric diathesis.

Ver. alb., after great fear or fright, with cold sweat, exhausting vomiting and diarrhœa.

Zincum, usually feels best during menses; fidgety of feet.

Besides compare the chapter on Leucorrhœa.

Morbid Growths within the Womb.

Mucous polypi are usually an outgrowth of chronic catarrh, and consist of enlarged follicles, which elevate the loosely-textured mucous membrane, gradually forming club-shaped bodies which

hang on a slender pedicle or stem from the fundus down towards the os, or if situated near the cervix, protrude through the external os. Their covering membrane being very vascular, gives them a cherry-red color, and they bleed easily and often profusely; their size varies from that of a pea to that of a hazel-nut, seldom much larger.

Fibrous polypi consist of submucous fibroids, which project into the cavity of the uterus, and are covered by the mucous membrane which they push forward. They arise from the body of the womb, and remain more or less continuous with the same by means of a more narrow or broader pedicle. Their size varies greatly, and may attain to the dimensions of a child's head and over. Such growths should properly be called *submucous fibroids*, but are best known under the name of *uterine fibrous polypi*. If these morbid growths take in their development an outward direction towards the peritoneal covering, which they naturally push before them, they are called *subserous fibroids*, and if they develop within the uterine wall itself, constituting a portion of the same, they are called *interstitial*, *intraparietal* or *intramural fibroids*.

It is often the case that all three kinds of fibroids are associated with each other. These tumors do not directly endanger life, but may become dangerous through hæmorrhage or suppuration and ichorous degeneration, and constitute at best a constant interference with the enjoyment of life.

THERAPEUTIC HINTS.—As the most important remedies compare Calc. carb., Calc. phosph., Conium, Lycop., Nitr. ac., Phosphor., Sanguin., Silic., Staphis., Teucrium, Thuja. Many others may be indicated in individual cases. In case of hæmorrhages compare the respective chapter. Operative means belong into the domain of surgery.

Moles are fleshy bodies of various sizes, to which is attached a sac filled with fluid resembling the amniotic fluid; they are embryos not normally developed. The cause for this failure of normal development may lie in the *ovum*, being from some cause or the other incapable of a normal development ab initio, or in the *semen*, being not healthy enough to insure a normal growth, or, according to Eaton, in the too small number of *spermatozoa*, which penetrate the ovum. This latter may be the result of using a syringe after connection, or of withdrawing the penis

before ejaculation, or of constriction of the cervical canal in consequence of flexion, preventing the free ingress of semen into the uterus.

Its SYMPTOMS are usually those of pregnancy; and when the abnormal mass is expelled by the efforts of nature, the indications for remedial aid correspond to those of abortus.

Hydatids are numerous cysts or vesicles attached to each other like a bunch of grapes, filled with a transparent fluid like water. Upon microscopical examination they were found to contain the heads of echinococci, and as hydatid developments are not confined to the uterus, but have been found also in the liver, lungs, testicles and mammæ, they cannot be considered as the result of imperfect impregnation.

Cancer of the Womb.

Carcinoma is, according to Waldeyer, "developed by normal pavement or glandular epithelium penetrating with its ramifications into the depths of the tissues in all directions like plugs, destroying the other tissues in all directions by pressure and forcing apart the bundles of connective tissue-fibres, so as to form for itself a framework of connective tissue and an alveolar structure for the whole tumor."

"According to the preponderance of either this connective tissue framework, or the nests of cancerous epithelium, we distinguish the harder forms as **Scirrhus** and the softer as **Medullary cancer.**"

The degeneration begins almost always at the vaginal portion, rarely extends to the fundus, is, however, very apt to spread down the vagina, over to the bladder and rectum, causing, at this period of its decay, a most horrid destruction of these parts. Its most important SYMPTOMS are pains in the small of the back, loins and groins, which grow more and more violent; hæmorrhages, at first only during the menstrual periods, later at any time; and leucorrhœa, which becomes more and more watery, corroding and offensive.

The **Cauliflower excrescence** is a cancroid hypertrophy of the papillæ in the mouth of the womb, which sometimes attains an enormous size in the shape of cauliflowers. It looks bright red, bleeds easily and is prone to cancerous degeneration, in which state it undermines the general constitution by pain and loss of

blood, like cancer of the womb, to which it is similar in all its symptoms. A DIFFERENTIAL DIAGNOSIS between the two can be gained only by an examination with the speculum.

THERAPEUTIC HINTS.—**Arsen.**, great exhaustion; restlessness and fits of anguish, with terrible, sharp, burning pains; all worse about midnight; acrid, corroding and burning discharges, watery, light or dark colored, often very offensive.

Aur. mur., stinging, cutting, pressive pains in the uterine region; very offensive discharges; belching up of wind; craves nothing but sour things.

Bellad., painful bearing down in the pelvis, as though everything would fall out of the genitals; a similar pain in the small of the back; frequent, transient stitches in the region of the womb; hæmorrhages from the womb, profuse, often very offensive.

Calc. carb., burning soreness in the genital organs; aching in the vagina; profuse menstruation; flow of blood between the monthly periods; cold feeling on the top of the head; great sensitiveness to cold air and liability to catch cold; scrofulous diathesis.

Carb. an., burning in the abdomen, extending into the thighs; labor-like pain in the pelvis and small of the back, extending into the thighs, with discharge of slimy, discolored blood; irregular menses; uterus swollen and hard; cachectic appearance of the face; earthy color of the skin; great weakness.

Carb. veg., paroxysmal spells of burning in the uterine region; varicose veins on the external genital organs; cold knees in bed.

Conium, stitching pain in the womb, accompanied by such symptoms as accompany pregnancy: nausea and vomiting; craving sour or salt things; pain and swelling of the mammæ during the menses; dejection of spirits, etc.

Graphit., cauliflower excrescence; burning, stitching pains, like electric shocks, through the womb, extending into the thighs; great heaviness in the abdomen when standing, with increased pains and faintness; menses only every six weeks, with a discharge of black, clotted, offensive blood, and an increase of all the sufferings; constipation; earthy color of the face; frequent chilliness; sad, desponding.

Iodium, cutting in the abdomen, with pains in the loins and small of the back; uterine hæmorrhage at every stool; indurations of the uterus; painfulness and feeling of heaviness in both

mammæ; they hang down, relaxed and lose their fat; dwindling and falling away of the mammæ; the patient feels worse from external warmth; after abuse of mercury.

Kreosot., cauliflower excrescence; awful burning as of red-hot coal in the pelvis, with discharge of clots of blood having a foul smell; bearing down and sense of weight in the pelvis; drawing pains in the small of the back and uterine region, extending to the thighs, intermingled with stitching pains; the vagina is swollen and burning hot; long-standing leucorrhœa, becoming more and more watery, acrid, bloody, and ichorous all the time; frequent hæmorrhages from the womb; dwindling and falling away of the mammæ, with small, hard, painful lumps in them; wretched complexion; great debility; sleeplessness.

Laches., pain in the parts as if swollen, they do not bear contact, and have to be relieved of all pressure; coughing or sneezing causes stitching pains in the affected parts; tenacious and acrid menstrual flow with labor-like pains; discharge of a few drops of blood from the nose before the menses, which are scanty and delaying; especially indicated during the climacteric period *with* frequent uterine hæmorrhages.

Lycop., drawing in the groin; burning and gnawing; chronic dryness of the vagina; pressing through the vagina on stooping; discharge of wind through the vagina; pain in the small of the back, extending down to the feet; incarcerated flatulence, with rumbling in the left hypochondriac region; red, sandy sediment in the urine; jerking of single limbs awake or asleep; feels worse in general from four to eight o'clock P.M.

Magn. mur., scirrhous induration of the womb; uterine spasms extending to the thighs and occasioning leucorrhœa; discharge of black clots of menstrual blood, more when sitting than when walking; large, hard, difficult stools which crumble off as they are expelled.

Merc. sol., syphilitic taint, prolapse of the vagina; swelling of inguinal glands.

Murex purp., a lively, affectionate disposition has turned to melancholy from the affects of the disease; frequent, profuse menstruation, and strong sexual desire; soreness in the region of the cervix, or a feeling as though something was pressing on a sore spot in the pelvis, with pain in the right side of the uterus, going into the abdomen or thorax; watery, greenish leucorrhœa, irritating the parts; dragging and relaxation in the perineum; pains in

the hips, loins, and down the thighs, worse from exertion. (B. F. Betts.)

Nitr. ac., irregular menstruation in shorter or longer intervals; during the intervals a profuse, discolored, brownish, and offensive leucorrhœa; great debility, nervousness, and depression of spirits; hæmorrhoidal tendency; great pain in the rectum after stools, lasting for hours, even worse after a diarrhœic evacuation; the urine is very offensive. During a ride in the carriage they feel much better.

Natr. carb., induration of the neck of the womb; the os uteri is out of shape; pressing in the hypogastrium towards the genital organs, as if everything would come out; metrorrhagia; putrid leucorrhœa; headache in the sun and from mental labor; she gets nervous from playing on the piano, and feels great anxiety during a thunder-storm.

Phosphor., frequent and profuse metrorrhagia, pouring out freely and then ceasing for a short time; heat in the back; chlorotic appearance; instead of menses, watery, slimy or acrid discharge, causing blisters.

Phytol., menses too frequent and too copious; mammæ painful; sterility; constipation; syphilitic taint.

Rhus tox., great soreness in vagina preventing an embrace; the menstrual flow, being profuse, protracted and of light color, causes biting pain in the vulva.

Sepia, induratio colli uteri or vaginæ; painful stiffness in the uterus; pressing from above downwards, oppressing the breathing; must cross her thighs, in order to get relief; pot-belliedness; yellow saddle across the bridge of the nose; feels worse while riding in a carriage. Menses scanty; aversion to coitus; sad and indifferent.

Silic., she feels nauseated during an embrace; diarrhœa or else great costiveness before the menses; increased menses, with repeated paroxysms of icy coldness over the whole body at the time of their appearance; indurations of the mammæ; most of the symptoms make their appearance about new moon.

Tarant., cancerous ulcer of os, induration of neck and fundus, chronic vaginitis with granulations. (Nuñez.)

Thuja, cauliflower excrescences.

Besides compare: Apis, Calc. carb., China, Clemat., Coccul., Hydrast., Sabina, Staphis., Sulphur and others.

Hysteralgia.

Under this term we understand a *neuralgia uteri*, or as it was formerly called, an *irritable uterus*, which consists of severe, oftentimes even excruciating pains in the region of the womb, without our being able to prove the existence of corresponding changes in the uterus by our present methods of investigation. Hysteralgia therefore, excludes all those cases where the existing pain can be traced to morbid alterations objectively demonstrable. These attacks of neuralgic pains are prone to remissions and aggravations, greatly influenced by the state of the atmosphere, by mental or emotional excitements, by indigestion, etc., and are generally found in women of a nervous temperament.

THERAPEUTIC HINTS.—Here, too, as in all neuralgias, the number of remedies which may be indicated is very large.

In pains running *upward:* Laches., Lycop., Phosphor., Sepia.

Downward: Ipec., Nux vom., Æscul.

From os ilii forward and downward: Bryon.

From groins outward and backward: Sepia.

From groins to back: Sulphur.

From back to groins: Sabina. (J. C. Morgan.)

Dreadful bearing-down, dragging-out feeling: Secale. (Burnett.)

Compare the chapters on Abnormal Menstruation, especially Dysmenorrhœa.

Metrorrhagia, Hæmorrhage from the Womb.

We understand by metrorrhagia a more or less profuse flow of blood from the womb at any other time than that of the menstrual period.

1. It may occur in the *not pregnant state of the womb*, in consequence of abnormal fluxion to that organ, or in consequence of morbid growths in the womb and disorganizations of the organ, as shown in the previous chapters, or (and that is, perhaps, its most frequent occurrence) in consequence of those conditions which lead to the so-called "change of life" in the female organism; here it is, perhaps, not always distinguishable from a mere profuse menstruation.

2. *It may occur during pregnancy.* With some women it is almost a rule, that the menstrual period is repeated several times

after conception, without apparent injury to the child. In others, however, a hæmorrhage during the first months of pregnancy is the forerunner of abortion. Hæmorrhages during the second half of pregnancy are often signs of a placenta previa, or likewise forerunners of miscarriage.

3. It may occur *after the expulsion of the child*, whether it be fullgrown or not. Such bleedings are generally of great importance. They are almost always (if not occasioned by mechanical injuries) the consequence of insufficient contractions of the womb, the causes of which consist either of protracted or exhausting labors, or a too rapid expulsion of the child, or a partially-adhering placenta, or large blood coagula within the womb.

4. When occurring later, *during the lying-in time*, the hæmorrhages are usually not so profuse and happen chiefly in women who do not nurse the child. Sometimes, however, they may be caused by an inflammatory irritation of the womb.

5. It may occur during an attack of typhus, variola, cholera, etc.

Metrorrhagia sets in frequently with chilly spells. The bleeding is either in gushes, or a continuous flow of bright red or dark blood. The face turns pale, the extremities grow cold; there is anxiety, restlessness, labor-like pains or colic; sometimes difficulty in breathing; vomiting and even convulsions. A great loss of blood brings on the signs of anæmia: coldness and deadly paleness of the face; chills; cold perspiration; darkness before the eyes; ringing in the ears; faintness, drowsiness, weak pulse, convulsions.

THERAPEUTIC HINTS.—Apocyn. cann., the flow is either continuous or paroxysmal; the blood fluid or clotted; there is nausea, vomiting, palpitation of the heart, great prostration and fainting when raising the head from the pillow.

Arsen., pale, hippocratic face; sunken, lustreless eyes, and icy cold extremities, spots and blisters on skin, with oozing of blood.

Arnica, after difficult labor or external injuries; head hot; remaining body cool.

Bellad., great bearing down, as if everything would be pressed out, or a pain from the sacrum through the pelvis to the pubis; the blood feels hot; headache; loss of consciousness; darkness before the eyes; enlarged pupils; cold nose; oppression, groaning, yawning, jerkings of the arms; convulsive clenching of the thumbs.

Calc. carb., climacteric period; chronic; mixed with leucorrhœa; previously always inclined to profuse and protracted menses.

Cauloph., threatening abortion, and with spasmodic bearing-down pains; great vascular excitement; passive hæmorrhage after abortus or confinement; tremulous weakness of the whole system.

China, at the commencement or actual presence of the above described symptoms of anæmia.

Chamom., threatening abortus or actual abortion; labor-like pains from the small of the back extending to the genitals; blood dark and clotted.

Crocus, dark, viscid, stringy blood, in black clots; feeling as if something alive were in the abdomen; nervous excitement; palpitation of the heart; fearfulness; after being overheated, straining and lifting; after abortus and delivery; worse from slightest motion; yellowish, earthy color of the face.

Eriger., uterine hæmorrhage, with violent irritation of the rectum and bladder; after abortion, with diarrhœa and dysuria.

Ferrum, partly fluid and partly black, clotted blood; labor-like and colicky pains; fiery red face; frequent short shudderings; headache and dizziness; constipation and hot urine.

Hamam., passive hæmorrhage, with anæmia; soreness of the abdomen.

Hyosc., continuous flow of bright red blood, or in bright red clots, with spasmodic jerkings of the body and great vascular excitement; nausea; vomiting; hiccoughing.

Ignat., after the abuse of chamomile tea; after mental excitement and depression; gone feeling in pit of stomach.

Ipec., especially after child-birth or the taking away of the placenta; the flow is continuous, and the patient *gasps for breath* and is deadly pale.

Kreosot., black blood in large quantities and of an offensive smell; during the climacteric period.

Kali carb., threatening abortus and consequences of it; great weakness in the small of the back and lower extremities; pain in the small of the back as though it were broken; dry, hacking cough; obstinate sweating, with feverish chilliness; chronic inflammatory states of the womb, with nausea and vomiting.

Laches., climacteric period.

Lycop., partly black, clotted, partly bright red blood, and partly

bloody serum, with labor-like pain, followed by swooning; distention of the abdomen in different places, changing localities; pain in the small of the back, extending into the thighs; worse in the afternoon from four o'clock, commencing with chilliness; restless sleep; dreams of falling down from a height; especially for women who habitually menstruate profusely.

Mercur., frequent fainting; profuse, cold perspiration on the face; collection of slime in mouth and throat; external swelling of the genitals.

Nitr. ac., after miscarriage or confinement; diarrhœa, with cutting pain in the rectum after stool; urine of an intolerably strong smell.

Nux vom., during the climacteric period, and especially if such persons have been drugged previously by allopathic nostrums, or have used much coffee or alcoholic drinks, or too highly-seasoned food; if they lead a sedentary life, complain much of costiveness and headache, suffer with piles, etc.

Phosphor., between the menses and during pregnancy; lame and bruised feeling in the small of the back; dry cough and tightness in the chest, worse before midnight; great heat on the top of the head or in the spine; a great deal of vertigo; chronic looseness of the bowels, worse in the morning, or else chronic constipation, with dry, narrow stools.

Platina, during pregnancy; after confinement; after great mental emotions; dark, thick, not coagulated blood; pressing pain from the small of the back downward upon the pelvic organs, as though they would come out, with great sensitiveness of the external organs, and nymphomania; sometimes a feeling as if limbs and body were growing larger.

Plumbum, during the climacteric period; dark clots, alternating with fluid blood or bloody serum, with a sensation of fulness in the pelvis and slight bearing-down pains from the small of the back to the front; skin dry, pale, yellowish; here and there "liver-spots"; great debility, short breath on going up stairs; depressed spirits. Poisoning with lead brings on abortus.

Pulsat., dark, coagulated blood emitted in paroxysms; worse in the evening, with labor-like pains; habitual looseness of the bowels; ordinarily rather scanty menses; yielding disposition.

Rhus tox., bright red blood; threatening abortus, induced by straining or lifting; trembling sensation in the middle of the chest; contractive pain around the hypochondria; drawing, tear-

ing in the back, loins and hips; cramp-like contraction of the thighs; aching all over, worse during rest; heavy, unrefreshing sleep, full of dreams.

Sabina, blood bright red or dark, also in clots, sometimes alternating, now dark, coagulated, and then, again, thin and bright red; flows mostly in paroxysms, which are brought on by the slightest motion; or it ceases when walking about; drawing, cutting, pressing pains from the small of the back to the genitals and into the thighs; women who menstruate early and almost always profusely; gouty diathesis; when the patient feels better in cool and worse in warm temperatures; threatening abortus; after miscarriage and confinement.

Secale, atonic hæmorrhages during the critical age; after confinement; dark, seldom coagulating blood, sometimes fetid; no pain, or only slight bearing down; flooding, worse from the slightest motion; trembling, convulsive jerkings of the limbs; cramps in the calves of the legs; general coldness.

Sepia, climacteric age, or during pregnancy, especially during the fifth and seventh months; congestion of the head; fulness and pressure in the chest; spasmodic contractions in the abdomen, with terrible bearing down; induration of the womb; varicose veins; yellow, sallow complexion. Such patients are very irritable, and faint from any little exertion.

Sulphur, in chronic cases, when other remedies do not prevent its return; psoric taint of the system; eruptions here and there, or previously suppressed eruptions; looseness of the bowels early in the morning, or else great constipation; fits of gnawing hunger before dinner; the patient complains of great heat, or flushes of heat; has sleepless nights, seemingly without cause, or on account of a tormenting itching all over the body; itching about the anus and genitals; chronic leucorrhœa, etc.

Trillium, gushing of bright red blood at least movement, at times dark clots; frequent desire to urinate. Sallow face with white lips and tongue; tossing in bed from evening until after midnight, with a feeling as if hips and small of back were falling to pieces and a desire to bind them up tightly. (F. G. Gilchrist.)

Ustilago, at the climacteric period; active and constant flowing with frequent clots.

MENSTRUAL ANOMALIES.

1. Menorrhagia

Is, like metrorrhagia, a profuse flow of blood from the womb; only with the difference that it occurs *at the time of the menstrual period.* This period may keep regular time, or it may come too soon, or it may last too long; in some cases the menses are too profuse, too early and lasting too long. Its causes are various. We may trace it to different structural changes and morbid growths of the uterus; to stagnation of the blood in the uterine veins, depending upon heart and lung diseases; to fluxions to the womb, brought on by sexual excesses, or sexual excitements by loose literature or onanism; to hæmorrhagic diathesis, as in scurvy, purpura hæmorrhagica, hæmorrhagic small-pox, measles, typhus, etc. Such cases, however, are of rare occurrence. The blood is either fluid or coagulated, and may differ greatly in color and character. Strong, plethoric women may endure menorrhagia for a long time; weak, feeble women soon show signs of anæmia.

THERAPEUTIC HINTS.—Compare the preceding chapter on Metrorrhagia, and likewise those which treat of its causes as stated above.

Amm. carb., premature and very copious flow, especially at night, when sitting or riding, and after a ride in the cold air; with spasmodic pains in the belly and hard stools, with tenesmus; cholera-like symptoms at the commencement of the flow.

Arg. nitr., congestion of the uterus; cutting pains in the small of the back and groins; cramp in the stomach; great debility of the lower limbs; vertigo and enlarged feeling of the head.

Bryon., menses premature and too profuse; dark red blood; tearing in the limbs; splitting headache from the least motion, even on moving the eyes; white-coated tongue; great thirst; bilious vomiting; tearing in the limbs; constipation; stools as if burnt; or diarrhœa in the morning.

Calc. carb., profuse, too early and lasting too long; anæmic symptoms and congestions of the head and chest; leucorrhœa afterwards; scrofulous diathesis.

Calc. phosph., menses every two weeks, black and clotted; before their appearance, griping and rumbling in the bowels; leucor-

rhœa; stitching pains in the left side of the head; sleepiness during the day.

Cann. ind., violent uterine colic; great nervous agitation and sleeplessness; or cold hands and feet. (W. C. Richardson.)

Chamom., profuse discharge of dark, almost black coagulated blood, with drawing, clawing pains from the small of the back to the os pubis; irritable; fainting spells; cold extremities.

Cimicif., profuse and too early; dark, coagulated blood; aching in the limbs; severe pain in the back, down the thighs, and through the hips, with heavy pressing down; weeping mood; nervousness; hysteric spasms; great pain in the head and eyeballs, increased by the slightest movement of the head and eyeballs.

Coccul., profuse and too often; when rising upon the feet, it gushes out in a stream; paralytic feeling of the lower extremities.

Cocc. cacti, flow only in evening after lying down, not when stirring about; urging to urinate but cannot pass water until a clot of blood is discharged; nausea, vomiting. (C. B. Knerr.)

Collins., menorrhagia in connection with constipation and piles.

Crocus, profuse, and lasting too long, but coming at the right time; dark, clotted, stringy blood; wretched, pale, yellowish color of the face; palpitation of the heart on going up stairs; great debility.

Cyclam., "the flow almost ceased as long as she was moving about at work, but as soon as she sat down quietly in the evening the flow reappeared and continued after she went to bed." (H. Ring.)

Digit., venous, passive congestion, with pale or livid color of the face; coldness of the skin; swelling and painfulness of the feet; all in consequence of some cardiac anomalies.

Eriger., profuse and too frequent, with violent irritation of the rectum and bladder.

Ferrum, profuse, too frequent, and lasting too long; with a fiery-red face, whilst at other times the face is pale and earthy looking.

Gelsem., almost continuous flow, without any pain.

Hyosc., profuse, with delirium; convulsive trembling of hands and feet; silly manners, rage.

Ignat., profuse, too frequent and lasting too long; after great mental troubles, grief or fright; empty feeling in the pit of the stomach; great sensitiveness of mind without complaining.

Ipec., very profuse, with heavy breathing; constant nausea.

Iodium, profuse and too early; ovarian region painful, or sensitive to pressure; emaciation, notwithstanding a good appetite; chronic catarrh of the lungs.

Kreosot., profuse and last too long; great distention of the abdomen before the menses, so that she appears as though she were pregnant; blood offensive; leucorrhœa between the menstrual periods; headache before menses; is very stubborn and irritable. "Worse in lying, better from walking about." (Von Villers.)

Lycop., profuse and lasting too long; sadness and melancholy before the menses; yellowish color of the face; frequent jerkings of the limbs; incarcerated flatulence.

Nux vom., profuse and too early; great sensitiveness of the nervous system; can't bear light or noise; is put out of patience when spoken to; gets angry and violent without any provocation; is headstrong and self-willed; or gets frightened easily, and is almost beside herself from the least thing that may happen; she shuns the fresh air. After coffee, liquors, high-seasoned food, drugs, sedentary life.

Phosphor., profuse, too early and lasting too long; or too late, but very copious; afterwards great weakness, blue rings around the eyes; losing of flesh and great fearfulness; tender, sensitive women, with frequent heat in the back, and cold legs.

Platina, profuse, too frequent and long lasting; dark blood; pressing-down pains; excited sexual desire.

Secale, profuse, dark, without pain, lasting too long, being aggravated by the slightest motion or mental emotion.

Sepia, profuse, either too early or at the right time; venous congestion of the head; one-sided headache, with nausea and vomiting; loathing of all food; pot-belliedness after confinement; constipation; yellow spots on the face.

Trillium, menses every fourteen days, lasting seven and eight days; in the intervening time profuse leucorrhœa of a yellowish color and creamy consistence. The blood is at first bright red, but owing to anæmia, grows pale.

Veratr., profuse and too early; commencing with vomiting and diarrhœa; sensation upon the top of the head, as if ice lay there; nose, hands and feet cold; irritable, weeping mood.

2. Amenorrhœa.

Consists of the *absence of menstruation* in women between the ages of puberty and climaxis, with the exception of the periods

of pregnancy and nursing. The *non-appearance* of the menses at the age of puberty has its cause chiefly in chlorosis, scrofulosis, tuberculosis and rhachitis. Rarer are those cases in which it depends upon a degeneration of the ovaries; more frequent those depending upon chronic infarctions or catarrhal processes of the womb in consequence of the above-stated constitutional diseases. It has been observed, likewise, as a consequence of spinal diseases, imperforation of the hymen, and closure of the os uteri.

The *cessation* or *suppression of the menses* is usually a consequence of inflammatory processes, the causes of which have been detailed under the head of Metritis.

Vicarious menstruation is that peculiar anomaly of the menstrual function, by which, at the regular monthly period, hæmorrhage takes place, not through the womb, but by means of some other mucous membrane (nose, lungs, bowels, eyes, ears), from wounds and from telangiectasias. The reality of such abnormal action is established beyond any doubt.

The Symptoms of amenorrhœa consist chiefly of headache, especially on the top or on one side; heaviness of the feet; dyspnœa; dyspepsia; lassitude; sadness; sleepiness in the daytime; œdema; palpitation of the heart; epistaxis; hæmoptysis; hæmatemesis; swelling of the veins on the lower extremities, in combination with all the constitutional signs upon which the whole disturbance rests as a basis.

THERAPEUTIC HINTS.—**Acon.**, during puberty frequent bleeding of the nose; great palpitation of the heart; congestion of the head. After fright or taking cold.

Apis, in young girls, who are constantly busily engaged in this or that, but do nothing right; who let everything fall out of their hands or break it, and laugh over it; also great congestion of the head, and even delirium; œdematous swelling of the lower extremities.

Apoc., in young girls, attended with bloating of the abdomen and extremities.

Bellad., hæmatemesis instead of the monthly discharge; congestion to the head.

Bryon., bleeding of the nose instead of the monthly flow.

Calc. carb., in young girls of a plethoric habit, or a scrofulous diathesis, with different complaints, as if the menses would set in, but do not; suppression of the menses from working in water, with anasarca.

Carb. veg., at the time the menses should appear, violent itching of old tettery eruptions.

Caustic., epileptic fits during the time of puberty.

China, after suppression by chagrin; secretion of milk in the breasts.

Cimicif., in suppression from a cold, mental emotions and febrile symptoms; when rheumatic pains in the limbs, or intense headache, or uterine spasms are present.

Coccul., instead of the monthly flow: cramps deep in the abdomen; pressure in the chest; dyspnœa; groaning and moaning; great weakness, so that the patient is scarcely able to speak; paralytic feeling in the lower extremities.

Cyclam., chlorotic state; great dizziness and headache.

Cuprum, typical paroxysms of the most violent cramps in the abdomen, extending up into the chest, with nausea, retching and vomiting; convulsive motions of the limbs, with piercing shrieks.

Digit., age of puberty; dark red, bluish color of the face; distended veins on eyes, ears, lips and tongue; constant yawning; irregular action of the heart; suffocating feeling in bed; frequent desire to urinate; leucorrhœa; painful and swollen feet and limbs, with paralytic feeling in them. Bloody expectoration or nosebleed.

Graphit., after Pulsat.; congestion of the head and chest; dark redness of the face; constriction of the chest, when lying, with anxiety; itching between the fingers, and tetters; nails grow thick and crooked; the limbs upon which she lies go to sleep.

Hamam., vicarious bleeding from nose or stomach, with great constipation and varices on the legs.

Kali carb., age of puberty; spasms of the chest; swelling of the face, especially over the eyes; stiffness and pain in the small of the back; dryness of the skin; is easily frightened; sleepless after 3 o'clock A.M., feeling worse in all respects at that time.

Laches., nosebleed and cardialgia instead of menses.

Lycop., suppression from a fright; great agitation of the blood in the evening, or a feeling as though circulation had ceased; great desire for sweet things; sour belching; great fulness in the stomach and bowels; liver spots on the chest.

Mercur., cessation of the menses for several months; headache; weakness of sight; nervous trembling of the hands; earthy color of the face; prolapsus uteri; diarrhœa with tenesmus; œdematous swelling all over; tearing in the limbs, worse at night in bed, with constant sweating.

Millef., hæmoptysis.

Natr. mur., age of puberty; melancholy and sadness, or hastiness and impatience; awakes with headache; has frequent fluttering of the heart; the tongue is covered with small blisters, or shows the appearance of a so-called map-tongue; the bowels are costive and move with great difficulty, and there is cutting pain in the urethra *after* urination.

Phosphor., menses too late, or not appearing; tight feeling in the chest, with dry, tight cough, and spitting of blood, worse before midnight; bloatedness below the eyes; a great deal of vertigo.

Pulsat., age of puberty, or suppression, especially from getting the feet wet; nervous, timid, tearful disposition; always anxious about domestic affairs; pale, yellowish color of the face; dyspeptic feelings from eating pork or anything fat; inclined to looseness of the bowels; thirstlessness and chilliness; always feels worse in a warm room; hæmoptysis, hæmatemesis.

Rhus tox., suppression from getting wet.

Senecio gracilis, suppression; inability to sleep, nervous irritability; loss of appetite; coated tongue; bowels constipated; constant feeling of lassitude; disinclined to move about; wandering pains in back and shoulders. Is called "the female regulator."

Sepia, age of puberty or later; headache, with nausea; jerking with the head; paralytic sinking down of the eyelids; yellowness around the mouth, across the cheeks and nose; loathing of all food, even the smell of cooking nauseates her; nausea when riding in a carriage; diarrhœa after drinking milk; cold hands and cold feet, with frequent flushes of heat to the head and face; pot-belliedness.

Sulphur, great congestion to the pelvic organs and to the head; cold feet, and heat on the top of the head; the patient is very irritable, and inclined to religious reveries; chronic inflammation of the eyelids, or other psoric eruptions; dreads to wash with cold water; feels exhausted from talking; all worse when standing; sleepy in the daytime; sleepless at night; great agitation of the blood in the whole body.

Xanthox., after getting the feet wet; nauseated by the sight of food; constipated, nervous, discouraged; shortness of breath; legs swollen. (J. W. Davis.)

3. Dysmenorrhœa, Menstruatio Difficilis.

We understand by this, *painful menstruation*, without regard to the quantity of blood discharged, though in most cases the menstrual flow is scanty.

The different complaints accompanying it set in either before or at the time when the menstrual discharge begins, and generally last a day or two, and sometimes through the whole menstrual period.

We distinguish, according to its causes, three forms of dysmenorrhœa:

1. Dysmenorrhœa in consequence of *structural changes* or *flexions of the uterus*, which has been termed by some writers *mechanical dysmenorrhœa;* compare the related chapters.

2. Dysmenorrhœa in consequence of *congestion* in the uterus, or *congestive dysmenorrhœa;* it usually commences with all the signs of congestion to the pelvic organs—strong action of the heart, congestion of the head, and febrile motions in general. These symptoms continue one, two, or three days, until a more profuse discharge of blood has taken place. Not only plethoric individuals are prone to it, but also weakly and anæmic individuals. It is possible that, in some instances, this congestive state is induced by a thickened state of the peritoneal covering of the ovaries, and the consequent difficult perforation of a Graafian follicle. Very violent congestion may cause an exudate between the mucous lining and the parenchyma of the uterus, in consequence of which portions of the loosened membrane are thrown off and discharged—*membranous dysmenorrhœa.*

3. Dysmenorrhœa in consequence of a *morbid sensibility of the nervous system in general and the uterine nerves especially*, or *neuralgic dysmenorrhœa.* This manifests itself as a disturbance in the healthy equilibrium of the mind's action and a dejection of spirits, which commences even before the menses; the menses are attended at their beginning with distressing pains in the uterine region, in the back, and lower extremities, or with neuralgic pains in more distant organs, or with cramps, spasms, etc. It is quite possible that in some cases the violent, spasmodic, labor-like pains in the womb are caused by a spasmodic closure of the os uteri.

THERAPEUTIC HINTS.—Compare the foregoing chapters, and likewise those on Metritis and Displacements of the Womb.

Acon., congestive type, with violent backache; labor-like pressing in the womb; headache; restlessness; necessity to bend double on account of pain, but finds no relief in any position; tossing about.

Amm. carb., cramp-like pain in the womb before the flow, with pallor of face. (Talbot.)

Apis, congestive type; violent, labor-like, bearing-down pains, followed by discharge of scanty, dark, bloody mucus; stinging pain in the ovaries; scanty, dark urine; wax-colored skin.

Arsen., attended with various kinds of complaints; lancinations from the rectum to the anus and pudendum; toothache; restlessness; fear of being left alone; the pains are worse about midnight, seem intolerable, drive to despair and frenzy; external application of warmth relieves.

Asclep. syr., neuralgic type; *intermitting*, bearing-down, labor-like pains, accompanied with a copious discharge of urine.

Bellad., congestive and neuralgic type; violent bearing down, as if everything would issue out; violent throbbing headache, better from external pressure; throbbing toothache; enlarged pupils; throbbing carotids; drowsiness and inability to go to sleep; spasmodic twitchings; delirium; rage; frenzy; wants to bite; tries to escape, etc.

Bromium, violent contractive spasms some hours after the commencement of the menstrual flow, with subsequent soreness in the abdomen; loud emissions of flatulence from the vagina; hard swelling in the ovarian region; blue-eyed persons.

Bryon., congestive type; tearing in all the limbs, aggravated by motion; great thirst, white tongue; constipation, or diarrhœa in the morning; great irascibility.

Calc. carb., various complaints; toothache after the menses; nervous debility; pale bloatedness of the face; cannot bear anything tight around the waist; stiffness of the nape of the neck; pain in the back; cold hands and feet; sensitiveness to cold air; bad consequences from washing; scrofulous individuals.

Cact. grand., menstruation with most terrible pains, causing her to cry out aloud and to weep; the pains come on periodically, mostly in the evening; the menses are scanty and cease flowing when lying down; constrictive pain in the region of the heart, a feeling as if the heart were grasped and compressed, as by a band of iron.

Cauloph., painful contractions, congestion and irritability of the

womb; scanty flow; sympathetic cramps in the bladder and rectum; hysterical spasms of chest and larynx.

Chamom., neuralgic type; drawing, clawing pain from back towards front, with discharge of dark, clotted blood; great impatience, with crying and screaming; bloated, red face, or one side red and the other pale; hot, sticky perspiration on the forehead; after chagrin.

Cimicif., aching in the limbs; severe pains in the back, down the thighs and through the hips, with heavy pressing down; labor-like pains; weeping mood; nervousness; hysteric spasms, cramps; tenderness of the hypogastric region; scanty or profuse flow of coagulated blood; between the menses, debility, neuralgic pains, tendency to prolapsus.

Coccul., cramp-pain deep in the bowels, instead of the monthly with pressure in the chest, and anxiety, sobbing, moaning and groaning; great weakness and fainting spells; convulsive motions of the limbs whenever she wants to use them; after night-watching.

Collin., when complicated with obstinate constipation, piles and prolapsus.

Coloc., she draws the lower limbs up to the abdomen, to relieve the colicky pain; diarrhœa after indignation.

Conium, scanty menses; pressing downwards and drawing in the thighs; pain in the mammæ; suppressed sexual instinct; hysteric globus in the throat; vertigo, especially when turning the head or lying down.

Cuprum, typic paroxysms of terrible cramps in the stomach, extending to the chest, with nausea, retching and vomiting; also, general epileptiform spasms, with piercing shrieks; great thirst; on swallowing any fluid there is an audible clucking noise in the throat, like that of emptying a bottle.

Graphit., scanty menses, with crampy pains in the bowels and chest, and labor-like pressing in the small of the back; she is full of despairing grief, with weeping; always wavering and hesitating; has vertigo unto falling, and headache unto fainting, in the morning; pimply eruptions on the face about the monthly period; tettery eruptions, especially between the fingers, with great itching.

Hamam., severe pains through the lumbar and hypogastric regions, and down the legs; fulness of the bowels and brain, with severe pain through the whole head, resulting in stupor and deep sleep; varicosed veins on the legs; vicarious menstruation.

Laches., tearing in the abdomen, beating in the head, pain in the small of the back, and bruised feeling in the hips; all relieved by a full flow; bleeding of the nose before the menses; jealous disposition; craves coffee, and feels better after drinking it; ulcers on the legs, with a purplish circumference.

Lauroc., pain extending from sacrum to pubis; frontal headache, with dizziness and dimness of vision; great melancholy; icy coldness of tongue, and coldness of extremities. (Osborn.)

Magn. carb., during the pain no flow; flow more during night than during day; the blood is dark, acrid and thick; violent neuralgic pain in the face, right side, driving out of bed; or pain in the right shoulder or in the foot.

Natr. mur., menses scanty and dark; preceded by frontal headaches; often subject to fever-blisters on lips, and during summer to urticarious eruptions. (R. E. Bilding.)

Nux mosch., after suppression by bathing; fainting from pain; drowsiness, somnolence; changeable mood; does not know where she is; appears to herself as if changed to her surroundings; hands and feet icy-cold.

Nux vom., twisting pains moving about in the abdomen, with sickness of the stomach; crampy and stitching pains in the pelvic region; soreness across the pubis; cramps in the bladder; constant, unsuccessful urging to defecate; after all sorts of drugs and so-called pain-killers.

Phosphor., colicky pains; great fermentation in the bowels; a great deal of vertigo; chronic looseness of the bowels; or chronic constipation, with dry, narrow feces; slender-built women.

Platina, great bearing down to the genitals, with profuse menstruation; great fear of death; sadness and disposition to cry; or haughty disposition; tetanous-like convulsions.

Pulsat., colicky pains, with tossing about; the blood flows by fits and starts; chilliness; thirstlessness; hæmoptoë or hæmatemesis; paleness of the face; mild, yielding, tearful disposition.

Senecio, cutting pains in the region of the sacrum, hypogastrium, and groins, with too early or too profuse menses; she is pale, weak, and nervous, and has a slight cough at night.

Sepia, colicky pains and scanty discharge; great bearing down, which obliges her to cross the limbs; morning sickness and great sensitiveness against any smell from cooking; toothache; half-sided headache; nausea; constipation.

Sulphur, scanty menses of a thick, acrid blood; crampy colic;

terrible, neuralgic pains in the face; much concerned about her salvation; congestion to the head and heat on the top of it; spotted redness of the face; cold feet; standing increases the pains; chronic eruptions here and there.

Tarant., before menses bearing-down pain; fidgety of legs; must move about; better on riding horseback; during menses all worse with chorea-like restlessness, trembling and twitching of muscles. (P. Bender.)

Viburn. op., before menses pain in back, gradually extending to hypogastric region and down the thighs; headache with nausea and uneasiness; cramps and bearing-down before discharge appears, lasting till after the flow has ceased. (J. C. King.)

Xanthox., neuralgic fever with pain along the course of the genito-crural nerve. (E. F. Blake.) Abundant discharge.

VAGINA.

Catarrh of the Vagina; Vaginitis.

Like all other catarrhal affections of mucous membranes, it is characterized by redness, swelling and increased secretion of mucus. There are here and there little protuberances, which consist of swollen papillæ of the mucous membrane; it invests either a part of the vagina, or extends all over the organ. The secretion is at first scanty, but by degrees becomes more profuse and opaque. In chronic cases we find the vagina relaxed, its mucous lining bluish red, and studded with swollen papillæ. This relaxation not unfrequently leads to prolapsus vaginæ. The secretion is in such cases milky, more or less yellow, and sometimes of other appearances. It constitutes what is commonly called *leucorrhœa*, which is frequently the only sign of the existing trouble.

Its CAUSES are like those of the uterine catarrh, as recorded in their respective chapters; it is of quite rare occurrence during childhood, in which case it may be induced by the little threadworms (oxyures) creeping from the anus across the perineum into the vagina.

THERAPEUTIC HINTS.—Compare Uterine Catarrh.

The virulent catarrh of the vagina is spoken of in the chapter of Gonorrhœa.

Pruritus Vulvæ

Is frequently a mere symptom of other diseased conditions of the sexual organs. We find it in the beginning of pregnancy, and also before the menstrual flow; but its most intense forms occur during the climaxis, especially of unmarried women. The itching is so intolerable and distressing that it takes away all sleep and rest, and causes a number of nervous complaints. Physical examination generally reveals no particular change of the parts, except perhaps some dryness of the vagina or slight eruptions on the labia. Such persons are often subject to hæmorrhoidal complaints, and it is possible that this terrible itching is dependent upon a stagnation of blood in the vaginal veins.

THERAPEUTIC HINTS.—**Ambra**, during pregnancy, with soreness and swelling of the parts; numb feeling of the whole surface of the body in the morning; perspiration of the abdomen and thighs in the daytime when moving about; falling out of the hair, and great sensitiveness of the scalp to the touch.

Caladium, according to the experience of others and my own the most efficient remedy; the terrible itching sometimes causes the habit of onanism.

Calc. carb., itching and soreness; offensive discharge from the ears; cold in the head, with soreness inside of the nose; scrofulous taint.

Canthar., climacteric age; from rubbing and scratching, the skin swells into little tumors; urinary difficulties.

Carb. veg., itching and burning of the pudendum and anus, especially before the menses; itching, tettery eruptions on the body; leucorrhœa, with burning and soreness; hæmorrhoids.

Collin., distressing itching, in connection with prolapsus and constipation.

Conium, violent itching of the pudendum and vagina, especially after the menses, followed by a pressing downwards of the uterus.

Lycop., itching, burning and gnawing, with chronic dryness of the vagina; varicose veins.

Natr. mur., falling out of the hair on the mons veneris; dryness, or coolness and paleness of the vagina; aversion to an embrace; eruption on the boundaries of the hair on the neck.

Nux vom., tingling and itching in the parts, which excites sexual desire and induces onanism.

Platina, when the sexual desire is greatly augmented, even to nymphomania.

Sepia, swelling and itching eruption on the inner labia; leucorrhœa, with itching in the vagina and pudendum; ringworm-like eruptions on other parts of the body.

Sulphur, itching in the vagina and pudendum, with pimples all around; itching of the nose after menstruation; itching of the nipples; pimples here and there; hæmorrhoids.

Tarant., dryness and heat of the parts.

Zincum, excessive itching during the menses, inducing masturbation.

MAMMÆ.

Mastitis, Inflammation of the Breasts.

It develops itself chiefly during the period of nursing, and usually at the commencement; less frequently, during weaning. Its cause is stagnation of milk within the gland or a tube of the gland, induced by sore or imperfect nipples; or weakness of the child, in consequence of which the breasts are not thoroughly emptied of their contents; or undue pressure exercised upon the gland by misfitting dresses, producing obstructions in single tubes of the gland and final inflammatory symptoms. Here then we have an inflammation of the *milk-ducts* of the mammæ, which commences within and spreads outward. In other cases the inflammation begins in the *subcutaneous cellular tissue;* a kind of erysipelatous inflammation, spreading inward, and caking a portion of the breast. This form may be caused by external injuries, bruises, exposure to cold, and by fright; or it may be the result of the spreading of the above-named inflammation of the milk-ducts.

It is a most painful affection in either case, and frequently results in the formation of abscesses.

THERAPEUTIC HINTS.—**Apis**, burning, stinging pains in the breast; considerable swelling and hardness; erysipelatous inflammation.

Arnica, soreness of the nipples; bruises of the breast.

Bellad., during nursing and weaning, great hardness and swelling; bright redness in streaks along the milk-ducts; throbbing,

stitching pain; headache; fever; worse in the afternoon; bowels constipated, and urine scanty.

Bryon., sets in mostly with a chill, followed by fever; great stitching pain in the breast, worse from slightest motion; tense swelling; little or no redness; bursting pain in the head when rising, with dizziness; great thirst; thick-coated tongue; constipation; feces as if burnt; pain in all the limbs when moving.

Graphit., inflamed, cracked nipples; tettery eruptions on the scalp, hands and between the fingers; indurated Meibomian glands; old cicatrices from former inflammations.

Hamam., bleeding nipples, with great soreness.

Hepar, pain in the upper arms and thighs, as if in the bones; great hastiness in drinking and speaking; also in persons who have taken a great deal of mercury; when suppuration commences with frequent crawls, or when, after the breaking or opening of the abscesses (which latter, indeed, never ought to be done) the discharge is scanty, and there still remains great hardness of the inflamed parts.

Laches., when the inflamed breast has a purplish appearance.

Mercur., especially when after Bellad., notwithstanding, suppuration sets in; chilliness and profuse sweat, which does not relieve; great nervous weakness and trembling; also in cases where suppuration takes place in different parts of the breast.

Nux vom., nipples painful during suckling, with little or no soreness or rawness.

Phosphor., phlegmonous inflammation; breast swollen; red in spots or streaks; hard knots in different places, with fistulous opening, discharging a watery, discolored, offensive ichor; dry, hacking cough, with hectic fever and colliquative sweats; slender-built women, with a white and tender skin; weakened by disease or loss of fluids.

Phytol., sore and fissured nipples, with intense suffering when putting the child to the breast; the pain seems to start from the nipple and irradiate all over the body, going to the backbone, and streaking up and down, with excessive flow of milk, causing great exhaustion; a few days after confinement sudden chill, followed by some fever and a painful engorgement and swelling of the mammæ; the drawing of milk is impossible. In ordinary *caked breasts* it is called specific. Badly-treated "gathered breasts," with large, fistulous, gaping and angry ulcers, filled with unhealthy granulations and discharging a watery, fetid, ichorous pus; the gland is full of hard, painful nodosities.

Rhus tox., soreness and swelling of the breast from taking cold, especially getting wet; pain in all the limbs; worse when at rest; great restlessness; the lochial discharge turns red again.

Silic., chronic cases; when Phosphor. is not sufficient to heal the fistulous opening, with callous edges, or to disperse the hard lumps in the breast; pale, earthy color in the face; loss of smell; hectic fever.

Sulphur, sore and cracked nipples, with bleeding when nursing; the areolæ are covered with yellowish scales, from underneath of which oozes an acrid fluid, with itching and burning in the night; hard lumps in the breast; ulcerating sore, with spongy excrescences and great itching; sleepless nights.

Scirrhus seu Carcinoma Mammæ, Scirrhus, or Cancer of the Breast.

The scirrhous form is the most frequent; it appears either deep in the gland or nearer the surface, as a roundish tumor, which draws the region of the nipple inward, causing a navel-like depression by its gradually degenerating the surrounding tissue, and its adhesion to the external skin. Its development is slow, but terminates finally in a deep ulcer, with callous, exuberant edges, a foul, fungous opening.

The *medullary cancer* is of rare occurrence. It appears as one or several tumors, which *destroy in a short time the surrounding parts of the gland*, by ulcerating and producing fungous growths.

The development of cancerous growths rest upon a constitutional contamination, the nature of which we do not know. Its development is, in most cases, slow, often intermitting, making halts for a long time. Finally, it perforates the skin, and appears as an open cancer, making rapid strides to final destruction.

It is generally found in one breast at a time; sometimes in both, and often combined with scirrhous degeneration in other parts of the system. It causes the most intense, burning, stinging, lancinating pains, which deprive the patient of sleep and rest. The open ulcer discharges profusely an offensive ichor, or it bleeds easily and profusely when, by erosion, blood-vessels become destroyed. The nutritive action of the system is completely prostrated, and we see the patient gradually lose strength and sink, with symptoms of marasmus, œdema of the lower extremities, colliquative diarrhœa or a sudden profuse hæmorrhage from the ulcer.

THERAPEUTIC HINTS.—**Apis**, when there is *stinging, burning* pain, whether in scirrhous tumors or in open cancers; pain in the ovarian region, with bearing down; scanty, dark urine; œdema of the lower extremities.

Arsen., nightly, burning pain like fire, with great restlessness; loss of strength and emaciation; the pains grow better from the external application of warmth.

Ars. jod., with swelling of gland in axilla.

Asterias rub., recommended by Petros for cancers of the left breast.

Badiaga ought to be thought of, at least.

Bellad., scirrhous tumors, with erysipelatous inflammation and stitching pain; frequent bearing down in the genital organs.

Bromium, after the extirpation of a hard tumor in the left breast, there appears a hard, uneven tumor in the right breast, which is grown tight to its surroundings; periodical lancinating pains, especially at night, worse from external pressure; grayish, earthy complexion of the face; suppression of menses; emaciation, and great depression of spirits.

Calc. carb., indurations of the breast; too early and too profuse menstruation; soreness and swelling of breast before the menses.

Calc. ox., has, more than any other remedy, relieved the terrible pains in open cancers.

Carb. an., scirrhous tumor, hard and uneven; the skin over it is loose, on places of a dirty, blue-red appearance; the pains are burning and drawing toward the axilla; oppression of the chest; nightly perspiration of the thighs only; desponding.

Chim. umb., tumor broke and left a small, irregular ulcer, with worsted edges, sloughing, discharging fetid pus; axillary glands enlarged. (E. S. Coburn.)

Clemat., scirrhus, left side, with stitches in the shoulder; or when the whole gland is very painful, worse in cold weather and during the night; worse during the growing moon; while perspiring, she cannot bear to be uncovered.

Conium, particularly, if the origin of the tumor can be traced to a bruise; starting, lancinating pains.

Graphit., when the tumor grows out of old cicatrices, which have been formed by repeated gatherings of the breast.

Hydrast., scirrhous tumor; hard, heavy, and adherent to the skin, which is dark, mottled, and very much puckered; the nipple being retracted; pains like knives thrust into the part; cachectic appearance of the face.

Laches., tumor in left breast, with lancinating pain; in consequence of pressure upon the tumor the pain extends into the left shoulder and down the arm; there is a constant painful feeling of weakness and lameness in the left shoulder and arm, which is aggravated by using the arm. In open cancer, when it has a dark, bluish-red appearance, with blackish streaks of coagulated and decomposed blood; chronic leucorrhœa; painful menstruation on the first day.

Lapis alb., recommended by v. Grauvogl.

Lycop., hard tumors, with stitching or cramping pain; circumscribed redness of the face; worse from 4 o'clock P.M.; during the paroxysms of pain she is obliged to walk about and to weep; she feels better in the open air.

Phosphor., when the ulcer bleeds easily.

Sepia, indurations in the breast and ovaries; yellow, spotted face; chronic leucorrhœa.

Silic., with great itching of the swollen gland. (J. B. Bell.)

Compare besides, Aur. mur., Baryta, Chamom., Carb. veg., Cistus, Hamam., Hepar, Nitr. ac., Natr. mur., Phytol., Rumex, Sulphur, Thuja, Zincum.

SPINE.

Anæmia

Is a diminution in the amount of blood contained in the cord, either in consequence of an insufficient supply of arterial blood, or in consequence of general anæmia. The *insufficient supply* may be due to *weakness of the heart's impulse*, to *compression*, *thrombosis* or *embolism* of the *abdominal aorta*, or of *certain spinal arteries*. *General anæmia* may be the consequence of *great loss of blood*, *severe acute diseases*, *inanition*, etc.

Embolism of the aorta is usually followed by a rapid palsy of the legs, sphincters, reflex function, etc.; while in compression of the aorta the symptoms of paralysis keep pace with the gradual development of the constriction. Anæmia caused by thrombosis and embolism of small arteries, gives rise probably to mere local and subordinate symptoms, of which nothing is known definitely.

If general anæmia be the cause of spinal anæmia, the symptoms of the latter will be so covered by the general complex of symptoms, that it will be hard to say what belongs to the one or the other, although motor weakness and slight tremor after exertion, later paresis and finally paralysis, first of the lower limbs and extending upwards to trunk and arms, may be attributed to spinal anæmia. The symptoms usually are relieved in a horizontal position.

THERAPEUTIC HINTS.—We will have to consider the various causes. There may be indicated: Arsen., Calc. carb., China, Cimicif., Ferrum, Gelsem., Ignat., Nux vom., Phosphor., Phosph. ac., Secale, etc.

Hyperæmia

Is an increase in the amount of blood contained in the spinal cord and membranes, either in consequence of congestion (active or artificial fluxion) or stagnation (venous stasis).

Congestion may be produced by overstimulation of the cord—from overwork, severe marching, sexual excesses, etc.; by poisoning with strychnia, nitrate of amyl, carbonic acid, alcohol, absynthe, etc.; by collateral fluxion in consequence of the suppression of menses, hæmorrhoidal bleedings, foot-sweat, etc., or taking cold in general; by falls and bruises; and by febrile diseases.

Venous stasis finds its causes in diseases of the heart and lungs, in obstructions of the portal system, and accompanies severe spasmodic affections, such as tetanus, eclampsia, etc.

The symptoms of spinal hyperæmia are, without exception, bilateral, and usually limited to the lower limbs; they change their seat and degree of severity frequently and quickly, and are often relieved in a horizontal position. They consist at times of pain in the loins and along the spine, or of tingling, formication, or tearing pain in the lower extremities; of hyperæsthesia of the skin, girdle sensation and transitory jerking of the muscles, and trembling of the limbs. At other times we find symptoms of depression, such as numbness and heaviness of the lower limbs and slight anæsthesia.

THERAPEUTIC HINTS.—*Congestion* may require: Acon., Arnica, Arsen., Bellad., Cuprum, Hyper., Nux vom., Rhus tox., Sulphur, etc. *Venous stasis:* Compare heart and lung diseases; abdominal disorders.

Apoplexy, or Extravasation of Blood

Within the spinal canal. This may take place between the vertebræ and the dura mater, or between the different spinal membranes, or within the spinal marrow itself. It is, compared with apoplexy of the brain, of very rare occurrence. This may have its reason partly in the peculiarity of the structure of the spine, and its circulation, having numerous outlets and inlets, thus giving less occasion for stagnation in the circulation; and partly in the greater security with which a long cord like the spinal

marrow is held by its membranes, than a larger bulk, like the brain.

1. **Meningeal apoplexy**, being an extravasation of blood between the spinal membranes, shows, when anatomically examined, a collection, usually, of dark, coagulated, seldom fluid, blood, which extends over a smaller or larger surface within the spinal cord, sometimes filling the whole spinal column.

Its Causes are manifold. The blood may, in consequence of apoplexy of the brain, or in consequence of the rupture of aneurismatic swellings of blood-vessels in the brain, percolate into the spine. Its most frequent causes, however, are external injuries, either from excessive bodily exertions, or a fall, blow or wound, or diseases of the vertebræ. Trismus and tetanus seem to cause it secondarily.

Symptoms.—If it sets in *suddenly*, the patient falls down, as in an apoplectic fit, but without loss of consciousness or sense. If it develops *slowly*, it commences usually with headache and pain in the spine in the region of the exudation, which radiates in various directions, usually corresponding to the distribution of the nerve-roots first attacked; there is also formication, burning, tingling, etc., in the same regions, and characteristic jerkings of the muscles, occasionally increasing to convulsions, trembling of the extremities, tonic tension and contracture of various groups of muscles, and tetanic stiffness and painfulness of the back, making it difficult or impossible for the patient to move. After this, especially in large effusions, we observe numbness, pithiness, sensations of swelling and heaviness in the limbs and trunk, which may increase to paresis or even paralysis of the parts which are governed from the spot affected.

If the *cervical* region is affected the attack begins with pain in the occiput, shoulders and arms, and stiff neck; anæsthesia and paralysis of upper extremities; oculo-pupillary symptoms; difficulty of breathing and swallowing; violent dyspnœa; retarded and weak pulse. If in the *dorsal* region, we have pain in the back and abdomen, and pain in the form of a girdle; stiffness of the back; paralysis of the legs and abdominal muscles. If in the *lumbar* region, there is pain in the loins, tearing in the lower limbs, perineum, bladder, and genitals; stiffness of the loins; paralysis of the lower limbs, of bladder and rectum.

2. **Medullary apoplexy**, an effusion of blood within the spinal marrow itself, is found chiefly in the gray substance of the mar-

row and of various extent. It may be no larger than a pea, and it may reach the size of a hazlenut or an almond. Such effusions have been found most frequently in the cervical, less frequently in the dorsal, and least frequently in the lower portion of the spine.

Its Causes are chiefly inflammation, softening, or other lesions of the marrow which precede it. In some cases it seems to have been produced by external injuries, (fall, concussion, with or without fracture or luxation of the vertebræ, surgical operations) or by active congestion from taking cold, sexual excesses, overexertions of the body, etc.

Symptoms.—As premonitory signs we find numbness in the fingers and in the feet; after exertion, great weakness and stiffness of the nape of the neck, extremities, or of the whole body. Its existence is characterized by a *loss of voluntary motion*, which may come on suddenly or in the course of a short time more gradually. This paralysis affects all the parts which receive their nerves from that portion of the spine below the lesion, and it is always found on both sides. The paralyzed muscles are perfectly lax.

Like motion, so is also sensation more or less impaired. The parts below the lesion become on both sides insensible to touch or partially so. If paraplegia lasts for some time it causes the limbs to shrink, and brings on gangrenous bed-sores, sometimes quite rapidly.

A lesion higher up affects the actions of respiration and deglutition, and the nearer to the medulla oblongata the more so, causing *cessation* of respiration and consequent death by asphyxia.

Effusions in the dorsal and lumbar regions may exist for years, and if not too extensive may allow even a partial recovery.

THERAPEUTIC HINTS.—The causes will hint to the appropriate remedies. Compare the foregoing chapters.

Guaco is, according to Dr. Erb, a specific for paralysis of the tongue and extremities in consequence of bloody extravasation within the spine.

Spinal Irritation.

This complaint has by some been stricken out of the nomenclature of special diseases; Hammond considers it due to spinal

anæmia, especially of the posterior columns, probably dependent upon some derangement of the sympathetic system; Ollivier and others consider it due to spinal *hyperæmia* and still others look upon it as a *dynamic* disease, a functional disorder of the spinal cord, as there does not exist a pathological anatomy of spinal irritation. Nevertheless a certain group of symptoms, frequently found *in women*, seems to demand a separate consideration of spinal irritation, even if it be but a dynamic disturbance of the spinal cord.

Its most prominent SYMPTOMS are: Pain and discomfort in the back, most frequently between the shoulder-blades, next in the back of the neck, less frequently in the loins, always increased from bodily exertions. The sore or sensitive spot or spots of the spine are easily detected by pressure, tapping, the passage of a hot sponge down the spine and other irritations; at other times the pain is deep-seated and is produced by pressure upon vertebræ which are not sensitive, also by movements of the spinal column, by standing, etc. With these pains in the spine are frequently associated neuralgic pains in different parts of the body, sometimes fleeting, sometimes more stationary. There is usually great weariness and exhaustion upon slight efforts, so that walking or manual occupations, such as sewing, writing, piano-playing, etc., soon become unbearable on account of the pains they excite in back and limbs. *Spasmodic* symptoms, such as twitchings, choreoid movements, singultus, etc., are often observed, and *disturbances in the vegetative organs*—belching, nausea, vomiting; palpitation of the heart, dyspnœa, spasmodic cough, frequent desire to urinate, with abundant discharge of pale, clear urine—are frequently met with; numbness, tingling, and paretic symptoms are of less frequent occurrence. The patients are irritable, depressed and often sleepless; they complain of dizziness, noise in ears and an inability to read for any length of time; their hands and feet are usually cold and they flush easily.

Spinal irritation, if located in the *cervical* region, causes head and chest symptoms, if in the *dorsal* region, intercostal neuralgia, gastralgia, nausea, etc., if in the *lumbar* region, symptoms of the pelvic organs and lower extremities; and if *diffused*, symptoms of all kinds in peripherical organs.

Spinal irritation is of no stated duration; it may last for years with many fluctuations.

THERAPEUTIC HINTS.—A great number of remedies may be indicated and the treatment must be wholly symptomatical. The following remedies have proved successful in actual cases.

Act. rac., constant nausea and retching on pressure upon the spine, between the fourth and fifth vertebra; frequent fainting; palpitation on least movement; amenorrhœa.

Bellad., on pressure upon the dorsal vertebræ she cries out, gets pale, nauseated and belches wind; in the spine continual burning pain; stomach sore to touch, with nausea and vomiting after eating. Or, sudden shriek on pressure upon the fourth dorsal vertebra, followed by a dry, violent cough, red face, headache in forehead, photophobia and perspiration.

Coccul., stiffness of neck; pain in lower portion of spine; oppression of chest; palpitation of heart; trembling of limbs; numbness of right upper and lower limb. (Small.) Great hyperæsthesia of all the senses, and an exalted susceptibility to impressions; dreadful headaches, sleeplessness; when her mind is turned away from herself, her sufferings are forgotten. (C. W. Boyce.)

Hyper., tenderness of entire spine; paroxysms of pain in different joints, accompanied by mania; frightful illusions; attempting to hide from wild beasts; screaming if approached; no recollection of the attack; appeared as if just aroused from sleep. (A. L. Dornberg.)

Natr. mur., headache on waking in the morning; sleeplessness; constipation; salty taste and repugnance to food; trembling sensation in region of heart. Vision becomes dim and indistinct after reading a while; eyes sore on pressure upon them; occasional neuralgia in forehead, with nausea and sensitiveness of eyes to gaslight; at times only one-half of an object is visible; black spots and streaks of light before eyes; easily fatigued; weakness from slight exertion; restlessness of the limbs; pain in back and sensitiveness of spine. (Burr.)

Piper meth., pain in the back of the head and spine, and relief from all sufferings temporarily by change (mental or physical), slight excitement, or diversion of the mind to some other topic.

Rhus tox., violent pain in head from back to front, and down the spine; lies on her back; head and back drawn backward, the slightest touch or move causes excruciating pain. Pulse slow; obstinate constipation; complete sleeplessness; pain in paroxysms. After getting wet. (Dittrich.)

Secale, tenderness of lower cervical and upper dorsal spinous processes, with stiffness of neck. Pressure upon it produces pain there and all through the chest, with irritation to cough.

Tarant., a slight touch along the spine provokes spasmodic pains in the chest and indescribable distress in the cardiac region; at times the heart feels as if twisted over; intense headache, as though thousands of needles were pricking into the brain; sensation of burning all over the body. She trembled so she could hardly talk. Headache relieved by rubbing the head against the pillow. (Farrington.)

Neurasthenia Spinalis; Spinal Nervous Weakness.

Like spinal irritation, so is spinal *weakness* a functional disease without a demonstrable pathological basis; but it is predominantly an affection of the *male sex*. Its direct causes are *excessive mental efforts*, severe mental toil at night, *great mental excitement* from grief, affections, passions, etc., excessive sexual indulgence, onanism, etc., *severe exhausting diseases*.

It manifests itself in a *striking weakness and rapid fatigue*, especially of the lower limbs, from any little exertion in walking or standing; in *pain in the back*, which shifts about from different kinds of motion, or is brought on by slight exposure to cold; *in pains of the extremities*, which are associated with the fatigue occasioned by any little exertion; in *sexual irritable weakness*, by which, during coition, the semen escapes too quickly and the act is followed by great prostration; in *sleeplessness* for several hours in the night after a first sleep; in a general sense of illness, hypochondriacal feelings, and often a womanish disposition; in cold hands and cold feet. With all this there is an *absence* of any kind of *disturbance* in the natural *motility* of the limbs and their *sensibility*.

THERAPEUTIC HINTS.—These must be suggested by referring to the causes.

Excessive mental efforts require principally: Bellad., Calc. carb., Coccul., Cuprum, Ignat., **Laches.**, Lycop., **Natr. carb.**, Natr. mur., **Nux vom.**, **Psorin.**, **Pulsat.**, Sabina, Sepia, Silic., Sulphur.

Emotional excitement suggests: Anac., Aurum, Bellad., Bryon., Caustic., Chamom., Coccul., Coloc., Cuprum, Gelsem., Hyosc., Ignat., Laches., Lycop., Nitr. ac., Nux vom., Phosphor., Phosph. ac., Psorin., **Pulsat.**, **Staphis.**, **Stramon.**, Veratr.

Sexual excesses: Compare the corresponding chapters.

Exhausting diseases hint to: Calc. carb., China, Kali phosph., Picr. ac., Phosphor., Phosph. ac., Sulphur, etc.

Hydrorrhachis Congenita; Spina Bifida.

This is an affection entirely analogous to congenital hydrocephalus. Being an imperfect development of the fœtus, the latter is frequently expelled before its full time. There are cases, however, in which children are born with this affection at full time. Its nature, like hydrocephalus congenitus, is that of a dropsical effusion of serum, either between the dura mater and the vertebræ, or into the subarachnoideal space, or within the central canal of the spinal marrow.

When such effusion takes place, before the vertebræ have perfectly closed, its pressure from within prevents their final closing; thus, from deficiency of the vertebral arches, the spinal column, posteriorly, appears cleft in two; hence the name, "*spina bifida.*" This cleft may be of different degrees. There may be only one of the vertebræ not closed. In the worst cases, this anomaly extends over the whole spinal column. In most cases, however, the split is confined to the lumbar or sacral region. Through this opening the fluid which collects inside presses out, and appears in the corresponding region as a smaller or larger tumor, according to the size of the opening and according to the quantity of fluid contained therein. In almost all cases this tumor grows rapidly after birth; it fluctuates; becomes denser and larger when the child cries, inhales, or presses at stool, or when it is held in an upright position; it sinks in, becomes smaller, when the child is quiet, lies in a horizontal position, or when it exhales. External pressure upon the tumor is painful to the child, often causes convulsions and, if combined with hydrocephalus, sopor and general paralytic symptoms. But these signs may all be wanting, when its communication with the spinal canal is very narrow. In some cases it is not fluid alone that protrudes through the opening of the vertebræ, but also portions of the spinal marrow itself, with its membranes and nerves. Such tumors are less fluctuating than those which consist of mere serum.

In some cases the tumor or sac bursts during the birth of the child; in other cases, as already stated, the tumor grows rapidly after birth; the integuments gradually inflame, become excori-

ated, and finally burst in a large circumference, which is followed by convulsions and death. In still others, only small openings form, and the fluid gradually oozes out of it; it may close and reopen again; most generally such cases terminate in death. Still there are cases on record in which individuals affected with spina bifida have lived to the age of puberty, and longer.

THERAPEUTIC HINTS.—As the most important remedies, compare Arsen., Calc. carb., Calc. phosph., Lycop., Silic., Sulphur.

Leptomeningitis Spinalis.

We understand by this *an inflammation of the soft membranes, the spinal pia mater and arachnoid;* inflammation of the *dura mater* is rarely met with as a primary disease.

Its Pathological Character. The pia mater appears pale reddish, sometimes purple, swollen, and infiltrated with a jelly-like and frequently bloody exudation. After a while the redness disappears and the membrane looks dirty, yellowish and grayish, being covered with a coagulated, dirty-grayish and yellowish exudation, resembling inspissated pus. The inflammation sometimes extends over the whole membrane; reaching even into the cavity of the skull. In cases of recovery there are adhesions and thickening of the membrane, hyperæmia, hydrorrhachis and atrophy of the spinal marrow. The arachnoid is almost regularly involved in the inflammatory process.

As Causes, we find mentioned, inflammatory processes of neighboring organs, either of the spinal marrow or of the vertebræ; external injuries; exposure to cold, etc. It is quite a regular attendant upon **Tubercular basilar meningitis.**

Remarkable is its epidemic appearance when it is usually combined with cerebral meningitis, as in spotted fever, which compare.

Symptoms.—A combination with cerebral affections of course tinctures the whole picture at once with brain symptoms, and may even disguise the spinal affection altogether. (See Brain Diseases.) If the inflammation is confined to the *spinal pia mater,* we find:

1. *A pain in the back,* at the place of inflammation, which even extends over the whole spine, and which is aggravated by the

slightest motion, as turning in bed or rising, or pressing at stool, or voiding urine; it is better during rest; least in lying on the back; sometimes it is combined with a feeling of constriction around the body, as though a bandage were fastened around it.

2. *Pains in the limbs*, aggravated by motion and touch.

3. *Painful stiffness of the muscles*, which may amount to *opisthotonus*, especially in cases where the inflammation extends over the cervical portion of the pia mater. Even the masseter muscles may be affected, so that the whole resembles tetanus. Respiration is difficult, and the higher the inflammation extends the greater is the dyspnœa, which may end in suffocation. It is a characteristic feature that these tonic spasms are always excited by the least motion of the spine, but not by reflex irritation of the peripheric nerves.

Acute spinal meningitis may pass over into the chronic form, with exudation and consequent paraplegia. Tubercularization of the exudate is followed by œdema of the lungs, catarrh of the bladder and decubitus. Its PROGNOSIS is therefore rather a doubtful one.

THERAPEUTIC HINTS.—Acon., after a sudden check of perspiration or an internal injury; high fever; crawling in the spine, as of beetles; cutting pain, extending in a circle from the spine to the abdomen; numbness of the small of the back, extending into the lower limbs; the arms hang down powerless, as if paralyzed by blows; numbness, icy coldness and insensibility of hands and feet; all being accompanied by despairing thoughts and dread of death.

Atrop. sulph., convulsions all over, if Bellad. did not prevent.

Bellad., drawing, burning and throbbing pain in the spine; drowsiness, with inability to sleep; frequent starting, as if electric shocks were running through the limbs.

Bryon., stitch-like pains from the slightest motion.

Calc. carb. and **phosph.**, when the inflammation proceeds from a disease of the bony structure of the spine.

Cicuta, frequent jerks in the upper portion of the body; through the dorsal vertebræ and arms; occasional jerkings of the head.

Coccul., unwieldiness of the lower extremities, the legs cannot be lifted in walking, but are dragged along; the hands feel pithy, lose their sensibility.

Cuprum, clonic spasms, commencing in the fingers and toes and

spreading further; before the spasms, painful jerkings in the hands and fingers and different parts of the body, commencing on the left side.

Dulcam., rheumatic persons, who are always worse when the weather changes to cold; after taking cold; also during scarlatina and measles, when the eruption does not fully develop itself.

Hyper., after a fall; slightest motion of the arms or of the neck extorts cries; the cervical vertebræ are very sensitive to touch; headache; desire for warm drinks; asthmatic spells, or spells of short, hacking cough.

Kali hydr., after the abuse of mercury.

Mercur., paralysis of the lower extremities, of the bladder, or of the rectum, with occasional jerks in the paralyzed parts; violent pain in the spine, worse from motion; great restlessness and sleeplessness; aggravation at night in bed; insensibility of the skin.

Nux vom., the seat of the pain is the lumbar region; the pain is worse when trying to move whilst lying on the back, also worse in the morning; stiffness of lower limbs; great deal of belching; sensitiveness of the stomach and region of the liver to external pressure; stool seldom and hard.

Plumbum, in chronic cases, where the paralyzed parts soon fall away in flesh, where the limbs become painfully contracted, and where there are frequent spells of colic with retraction of the abdomen; worse on right side.

Rhus tox., in combination with exanthematic processes; or in consequence of getting wet; high fever; great restlessness; tingling sensation in the limbs; paralysis of the extremities.

Myelitis, Inflammation of the Spinal Marrow.

This affection is much less frequent than meningitis; and when it does occur, it almost always is associated with meningitis.

Its pathological features *in the stage of hyperæmia* (red softening) consist of swelling, redness, and exudation; *in the stage of fatty degeneration and of resorption* (yellow and white softening) the affected substance assumes a creamy or milky appearance, becomes softer and softer, until at last nothing remains but the vascular network, and a portion of the hypertrophied septa, the softened nerve-substance having been gradually absorbed. This leads in the *terminal stage* to the formation of cicatrices or cysts,

induration and sclerosis or hardening. The meninges are always more or less implicated in the inflammatory process.

Its *localization* in the spinal cord varies greatly. When acute it usually commences in the gray substance and may extend more or less in a vertical direction—(**Myelitis centralis**); it may pervade the entire thickness of the cord for a longer or shorter distance—(**Myelitis transversa**); it may involve only a small portion of the cord—both vertically or transversely—(**Myelitis circumscripta**); it may be spread over a large area but only in circumscribed and scattered spots—(**Myelitis disseminata**); it may attack only the peripheral layers of the cord—(**Myelitis peripherica**).

As its Causes are mentioned, chiefly, external injuries, and exposure to cold, or extension of inflammatory processes from neighboring parts. Sometimes it has been observed during the course of typhus, of the acute exanthemata, acute rheumatism, variola, pleuro-pneumonia, and other severe illnesses.

Its Symptoms embrace deviations in *sensibility* and *motion*.

1. *Sensibility.* The patient experiences at first a sensation of coldness, numbness, prickling and pain in single toes and fingers, which sensation extends from the periphery gradually further up towards the body; at first, perhaps, only in one, but soon in both sides. If there be a complication with meningitis, the patient cannot bear the slightest pressure or motion of the parts.

There is a pain in the spine, where the inflammation exists, which is aggravated more by external pressure than by motion; and a feeling of constriction in those parts of the body which are supplied with those nerves, the roots of which originate in and near the affected part of the spinal marrow (girdle pain). In some cases these parts are very sensitive, whilst those below are quite dull and insensible. A complete anæsthesia or insensibility, however, takes place only in those cases in which the lesion is a degeneration of the marrow through its whole diameter.

2. *Motion.* It shows itself at first as an unwieldiness of the peripheric muscles, which may end in complete paralysis. If the seat of the lesion be in the lumbar region, it causes paralytic symptoms of the lower extremities, which is of the most frequent occurrence; if it be in the dorsal region, it causes, in addition, paralysis of the sphincter ani and vesicæ; and if still higher up, violent agitation of the heart. A lesion in the cervical region affects the upper extremities, the respiratory motion, deglutition and even speech. Respiration is most seriously interfered with

when the lesion exists just above the origin of nerves of the diaphragm. When below it, it is a characteristic symptom that the patient is able to gape, but he cannot cough or sneeze.

As long as the marrow is not disorganized in its whole diameter, so long is it possible that the parts below the lesion may still remain intact; so that, for example, in a cervical myelitis only the upper extremities are paralyzed and the lower not. When, however, the lesion extends through the entire diameter of the marrow, then all the parts below the lesion lose sensibility and motion; so that in such a case the patient consists of two halves: an upper one, which is normal and sound, and a lower one, which is dead, and deprived of feeling and voluntary motion.

A peculiar and frequent symptom of myelitis is a *persistent erection of the penis.* The penis is painfully stiff, but shorter than normal, and may remain so for days. It occurs chiefly in those cases in which the lesion has its seat in the dorsal or cervical region.

Thus far we have seen that the symptoms of myelitis vary quite considerably according to the higher or lower location of the lesion. They vary, likewise, if the seat of the inflammation is confined only to the one or the other lateral cord. In such cases the paralytic symptoms may be only on one side—at least for a while—with more or less insensibility; or insensibility may exist in one, and paralysis in the other side, as in some traumatic cases.

The lower the seat of the disease, the more slowly it works. Many have lived more than ten years with paraplegia. Cervical inflammation may terminate fatally in a very short time by its paralyzing effect upon respiration.

THERAPEUTIC HINTS.—As myelitis is almost always accompanied by meningitis, compare Leptomeningitis.

Angustura vera, twitching and jerking along the back like electric shocks; tension of facial muscles; lockjaw.

Arsen., dyspnœa and anxiety; constriction and tightness of chest, as if bound with a hoop; twitching, trembling, violent starting, weariness in all limbs; tetanic spasms.

Gelsem., early stage; spinal weakness from exhaustion; confusion of head, spreading from occiput to forehead; dim sight; looks heavy, dull, drowsy; paresis of tongue and glottis; incontinence of urine; muscles feel bruised and will not obey the will; loss of voluntary motion.

Mercur., probably the most important. Compare Meningitis.

Phosphor., after sexual excesses or getting wet; also when in connection with an inflammatory process of the vertebræ; burning pain in the spine; some vertebræ sore to touch; dyspnœa and cough; weakness of sight; transient vertigo; constipation, with narrow, dry stools; numbness and insensibility of the extremities.

Physostigma, tremors of young persons from emotional or physical disturbances; staggering gait, as if drunk; feeling of constriction around head and waist; feeling of weakness, as though paralyzed, passes downward from occiput through back to lower limbs, which feel as if asleep.

Picric ac., tonic and clonic spasms; keeps legs wide apart when standing; looks steadily at objects, as if unable to make them out; limbs too weak to support the body.

Secale, violent pain in the back, especially in the sacral region; anæsthesia of the limbs; paralysis of the limbs; convulsive jerks and shocks in the paralyzed limbs; painful contraction of the flexor muscles; paralysis of the bladder and rectum.

Silic., when the bony structure of the spine is affected.

Sulphur, burning and tensive aching between the scapulæ; heat on the top of the head; palpitation of the heart; sleeplessness; often when other remedies do not seem to have any effect.

Veratr., painful paralytic weakness in the upper and lower limbs: he is scarcely able to drag them; tingling in the fingers, causing anxiety; painful jerkings in limbs.

Myelomalacia, Non-inflammatory Softening of the Spinal Marrow,

Is a process of which we know scarcely anything. Its symptoms are quite obscure, sometimes covered by the symptoms of spinal apoplexy, or myelitis, or typhus, sometimes even wanting. Its pathological character is a non-inflammatory degeneration of the marrow, by which it becomes converted into a soft, macerated mass of a whitish, yellowish or reddish color.

Inflammatory softening is the consequence of acute myelitis.

Multiple Sclerosis

"Is a form of chronic myelitis and encephalitis, which is characterized, *anatomically*, by the development of numerous insulated

sclerotic nodules, varying in size and of a chronic inflammatory nature, which are scattered irregularly throughout the entire cord, and usually also throughout the entire brain, but which seem to possess, nevertheless, certain spots of predelection. Sometimes a less intense, but more diffuse sclerosis unites the different nodules with one another." (Erb). It attacks women oftener than men and most frequently makes its appearance during the second and third decades of life, scarcely ever after the forty-fifth year, and but few cases are known to have occurred in children under ten years of age.

As direct CAUSES are mentioned: catching cold, excessive mental and bodily exertions and intense emotions, traumatic influences, pregnancy, hysteria and acute diseases.

Its SYMPTOMS are extremely variable and manifold, as a natural result of the development of nodules in so many different localities.

Disturbances of *sensibility* are of not constant occurrence; disturbances of *co-ordination* (ataxia) are frequently observed, but a peculiar *tremor*, which accompanies *voluntary* movements and progressively increases, is almost regularly present. By this tremor, which appears *at every attempt at moving a part of the body, head or limb, voluntarily*, differs *multiple sclerosis* entirely from *paralysis agitans*, where the trembling is predominantly observed during perfect rest, and may, at least in the earlier stages, be even controlled by the will of the patient.

Besides these symptoms we observe: *alteration of speech* and *voice*. The speech is slow, hesitating, more or less indistinct and the voice becomes weak and monotonous; the acts of laughing and crying are accompanied by peculiar, *noisy inspirations*, and the movements of tongue and lips are frequently impaired, interfering with *mastication* and *deglutition*. There is temporary or permanent *diplopia*, also *nystagmus, amblyopia* and at last *blindness* from atrophy of the optic nerve. We meet also *head-symptoms* in the form of *vertigo, sleeplessness, violent headaches* and in some cases repeated *apoplectiform attacks*, which are accompanied by high fever and followed by temporary hemiplegia.

This complex of symptoms fits only to typical cases; variations are exceedingly numerous, because the accidental distribution of the nodules varies in each individual case.

THERAPEUTIC HINTS.—Compare Myelitis.

Arg. nitr., vertigo and staggering gait; trembling and tremulous sensation; general debility with trembling of the limbs; chorea-like movements of limbs; transient blindness; sunken, pale countenance; sleeplessness.

Nux vom., especially in the beginning, with gastralgic attacks, vertigo, etc.

Phosphor., weakness of extremities and trembling at making an effort; legs weak, gait tottering as if he were not sure of himself; speech embarrassed; amaurosis with widely dilated pupils and deafness.

Physostigma, the will is strong, but a difficulty lies in the way of carrying out its purpose; the palsy is commonly preceded by twitching or trembling of the muscles. Attacks of partial blindness; nystagmus; trembling all over.

Plumbum, tremor of right arm during voluntary motion; the arms are "shaky" when he attempts to use them; tremor of arms, at times preceded by weakness and numbness; the tongue trembles when being protruded, or when he tries to articulate; speech dragging and slow. Diplopia; dimness of sight; neuritis of optic nerve. There are many more symptoms which hint to multiple sclerosis.

Tarant.[12], in water. Multiple sclerosis in consequence of fright and rheumatism. Trembling commenced in left hand, always aggravated by mental trouble. After a fright it affected all limbs. Intense pain during night prevents her rest and sleep, and an itching and crawling of left leg makes her rise and walk about. Bathing increases the pain, but fresh air ameliorates even at night. Intelligence and memory considerably diminished; trembling and pricking prevents from doing any fine work. Motility and sensibility unaltered; neither paralysis, anæsthesia, nor hyperæsthesia. The head trembles as much as the left hand and foot, and a slight tremor could be observed on the tongue, when opening the mouth. No appetite, chronic constipation. Since menopause, acne in face. The ophthalmoscope showed a slight hyperæmia of the retina. (Cramoisy.)

Tabes Dorsalis; Sclerosis of the Posterior Columns; Gray Degeneration of the Posterior Columns; Progressive Locomotor Ataxy; Leukomyelitis Posterior Chronica.

All these different names have been given to "a disease of the spinal cord which runs a slow course, which arises principally during youth and middle age, and which in all probability belongs to the group of **Chronic myelitis.**" (Erb.)

"It is anatomically characterized by ribbon-like sclerosis of the white posterior columns, leading to gray degeneration, and probably, also, by later participation on the part of the adjoining portions, of the white lateral columns and the gray posterior horns." "The affection generally begins in the lumbar region, and may extend throughout the entire cord as far as the upper cervical portion, and even into the medulla oblongata." (Erb.)

It attacks men much oftener than women, in the majority of cases between the thirtieth and fiftieth year of life; before the twentieth and after the fiftieth year the disease is of rare occurrence.

Its principal CAUSES are said to be: sexual excesses and onanism, catching cold, bodily overexertions and hardships of all kinds, traumatic injuries, emotional fits and passions; acute diseases, such as typhus, rheumatism, pneumonia, abortions, loss of blood, long-continued lactation, etc., diphtheria, etc. In many cases not any cause can be detected.

Its SYMPTOMS of the *first stage* consist of *lancinating, neuralgic pains* in the lower limbs, sometimes including the trunk, and more rarely the arms, in paroxysms, frequently changing in severity and location, and often extending over many months or even years; they at first appear at intervals, in the spring and fall, later they are induced by every change of weather, or any overexertion or mental disturbance. With these pains become associated, sooner or later, various kinds of *paræsthesia*, such as numbness, pithiness or formication in the feet, legs, thighs and on the trunk, and in the ulnar domain of one or the other hand —a characteristic symptom—in other cases, the sensation of a *tight girdle* at various heights on the trunk, or on the knee-joint or ankle-joint; further *motor weakness and insecurity*, which gradually increases to real *motor disturbances*, such as inability to walk and stand with former ease; unsteadiness when standing

and walking; a swaying to and fro when on the feet, all of which manifestations are more pronounced in the dark or by closed eyes. Often, not in all cases, to these disturbances are added, *diplopia* in consequence of paresis or paralysis of various eye-muscles, especially those supplied by the oculomotorius, and *amblyopia*, even *amaurosis*, in consequence of degeneration of the optic nerve. In many cases we meet with *disturbances* of the *bladder*, such as difficulty of micturition, dribbling of urine, etc., and with *weakness and irritability of the sexual functions*, such as various grades of impotence, insufficient erections, premature ejaculations, nocturnal or diurnal pollutions, excitability on coming in contact with women, etc. Gastralgia and head symptoms (dizziness, psychical irritability, etc.) are of rarer occurrence.

The *second stage* presents, besides the symptoms just detailed, a characteristic *disturbance in the coördination of motion*, which usually commences in the lower limbs. The gait becomes *ataxic*, that is, insecure, swaying, staggering; the legs are unsteadily swung about, the toes pointing outward and upward, and the heels coming down to the ground with a stamp; the whole operation, in most patients, is done under close supervision of the eyes, and does not succeed at all with closed eyes or in the dark. With this faultily and imperfectly controlled movement of the limbs goes hand in hand a diminution of their powers of *endurance*, and, although in a lying position at first, the *gross strength of the legs* seems but little reduced,—the patient is yet able to execute single movements of the limbs with tolerable certainty and strength, while in a lying position—yet by and by even in this position the voluntary motions become more and more uncertain, and especially so, if the patient closes his eyes, while at last walking and standing become quite impossible without help.

As the disease advances, the *ataxy extends also to the arms and hands*, so that complicated movements, such as writing, piano-playing, sewing, etc., become difficult, awkward, and at last impossible; the muscles do not obey any more the command of the will, but make all sorts of jerking and irregular movements when under its stimulation. *The reflex action of the tendons* is extinguished; a knock or blow, for instance, upon the patella-tendon above the knee is not followed any more by a jerk of the leg upward, etc.; the reflex action of the skin, however, may or may not be affected. All other symptoms of the first stage grow more and more intense, until at the *final stage* actual paralysis (para-

plegia), muscular atrophy, contractures, troubles of the bladder and the digestive organs, bed-sores and general marasmus finish the scene.

The disease is of long duration, which is to be counted by years, and is characterized by considerable fluctuations for better or worse—sometimes gradually advancing to recovery; oftener, however, terminating in death.

It differs from **Chronic myelitis** by its lancinating pains in the first stage and pronounced ataxy in its second stage, which myelitis has not;

From **Multiple sclerosis** by the same, instead of which multiple sclerosis presents a characteristic tremor on *voluntary* movement, attacking limbs as well as head and neck;

From **Progressive cerebral paralysis** by the absence of disturbances of speech and psychical changes, which are characteristic of cerebral paralysis;

From **Paralysis agitans** by its disturbance in the co-ordination of motion, instead of which there is in paralysis agitans a tremor in perfect rest.

THERAPEUTIC HINTS.—Alcohol, tremor worse in morning, cannot write; increasing muscular debility and paralysis; tingling, arthralgia, anæsthesia, clonic and epileptiform convulsions; locomotor ataxy.

Alum. met., recommended by Von Bœnninghausen and verified by others. Soles of feet feel as if they were swollen and too soft; numbness of the heels; heaviness of limbs, can scarcely lift them; slow, staggering gait, as after a long sickness; inability to walk except with eyes open and in daytime; pain in back as if bruised, or as if a hot iron were thrust through the lower vertebræ.

Arg. nitr., pains in the back, cannot walk with eyes closed, or in the dark; paralytic heaviness or weakness of the legs; staggering gait; legs feel as if made of wood, or padded, with insensibility to touch, diminished warmth, jerks in the toes, tottering, irresolute gait; emaciation of legs, with paralytic weakness; chorea-like convulsive motion of limbs; legs drawn up; arms jerked outward and upward.

Arsen., distressing pains; deadness in great toes, extending to foot and ankle-joint; feet feel large and heavy, and can be moved only by moving the whole limb; the gait is shuffling; feet are dragged along by lifting the legs; slight numbness in hands.

Paralysis with gressus gallinaceus, with atrophy of the muscles especially of lower extremities.

Bellad., heaviness and lameness of legs and feet; he raises the feet slowly and puts them down with force; loss of co-ordination of muscles of both upper and lower limbs; trembling, twitching of limbs. Diplopia; amaurosis.

Calc. carb., rheumatic pains in shoulders; loss of muscular power; atrophy of muscles of back, buttocks and lower limbs, with constant quivering; dimness of vision worse in right eye; cramps in feet and legs; excessively nervous; no appetite; constipation. (G. F. Butman.)

Cupr. ac., numbness and lameness of left hand, especially of the fingers as far as they are supplied with the nervus ulnaris. Dragging of left foot in walking; numbness and lameness in sole of left foot gradually extending up to knee; walking and standing difficult; foot and leg atrophied; constant sense of coldness in left foot, little relieved by the application of hot bricks. Sometimes dull pain from hip to knee. (Heinigke.)

Gelsem., acute, sudden, darting pains; shooting, tearing along the tracks of the nerves, aggravated by changes of the weather; paralysis of motion; muscles will not obey the will, feel bruised; tingling, prickling, crawling.

Nux vom., partial paralysis of lower limbs from overexertion and being drenched in rain; drags limbs in walking, cannot lift them from the ground; sensation of lower limbs impaired, feels the sticking with a pin only when it penetrates deep enough to draw blood; legs always cold, bluish; constipation; burning at anus; occipital headache; no painful spot in the whole length of spine. (Bojanus.)

Phosphor., burning heat in back; hands and feet numb, clumsy; limbs tremble from every exertion; when walking makes missteps, from weakness; swelling of hands and feet, with stinging pains; paralysis, formication and tearing in the limbs; anæsthesia; increased heat; sexual irritation; nocturnal emissions; great irritability and nervousness.

Physostigma, unsteady from knees downward on walking, he must look to see where he puts his feet; needs a cane to steady himself.

Picric ac., mental and physical prostration; cannot read a line without becoming exhausted; on attempting to walk he presses his hand upon his loin and slides his feet along the ground as in

a paretic condition, soon becoming exhausted; dull headache deep in occiput; bodily exhaustion with mental clearness; sleeplessness at night from sheer exhaustion; when asleep priapism and seminal emissions, with or without sexual dreams; during coition ejaculation too quickly; constipation. (S. Lilienthal.)

Secale, difficult, staggering gait; complete inability to walk, not for want of power, but on account of a peculiar unfitness to perform light movements with the limbs and hands; contraction of the lower limbs, on account of which the patient staggers; trembling of the limbs, sometimes attended with pains; formication of hands and feet. Excessive sensation of heat, with aversion to heat or of being covered. (S. Lilienthal.)

Stramon., totters as if giddy, cannot make a few steps without help; trembling of limbs; muscles will not obey the will; difficult to bring hand to tumbler or carry the latter to mouth; obscuration of vision.

Sulphur, unsteady gait; great debility and trembling; limbs go to sleep. After Nux vom. (Jahr.)

Tarant., difficulty of moving the legs, they do not obey the will; weakness of legs, etc.

Aside of these compare: Æscul. hipp., Coccul., Caustic., Laches., Nux mosch., Pinus sylv., Plumbum, Rhus tox., Silic. and many more.

Spasmodic Spinal Paralysis.

"This disease is *clinically* characterized by a gradually increasing *paresis* and *paralysis*, generally advancing slowly from below upwards, with *muscular tension, reflex contractions and contractures*, with strikingly *increased reflex actions* of *tendons*, while at the same time there is entire, or almost entire, *absence of all disturbances of sensibility* or *trophic disturbances*, of all *vesical* or *sexual weakness*, and of all *cerebral disturbances*." (Erb.)

Its *anatomical* basis is probably, according to Charcot and Erb, *a chronic inflammatory process, a sclerosis of the posterior divisions of the lateral columns.*

Its Etiology is unknown; it seems to develop most frequently between the ages of *thirty* and *fifty*, and also at times in *earliest childhood.*

Its Symptoms begin with *motor weakness* in one or both lower limbs, increasing to *paresis* and ending in *paralysis.* These symp-

toms of weakness are early associated with *motor irritations*, commencing with *twitchings*, or *jerkings* of the legs when sitting or lying, increasing to *spasmodic stiffness* when making certain movements, or to regular *tension of the muscles* on active and still more on passive motion, and ending in permanent and severe *contractures*, which fix the limbs in a position of extension. With all this there is a marked *increase* of the *reflex action of the tendons*, so that on merely placing the point of the foot on the floor, while sitting, a tremor very generally sets in, evidently in no respect different from the clonic trembling on passive dorsal flexion of the foot.

These combined paralytic and spasmodic manifestations result in a very peculiar, the so-called *spastic gait*, when the patient tries to walk, which is described by Erb as follows: "The legs are somewhat dragged, the feet seem to cleave to the ground, the tips of the feet find an obstacle in every inequality of the ground; every step is accompanied by a peculiar hopping elevation of the whole body, dependent on a reflex contraction of the calf; the patient immediately gets upon his toes, and slips forward on them, showing a tendency to fall forward. The legs are close together, held stiffly, the knees somewhat depressed forward, the upper part of the body slightly bent forward. There is no throwing about of the feet as in *ataxy*. This gait depends on muscular tension and reflex contractions in the various groups of muscles, which are set in activity during the process of walking."

Sometimes the disease extends from one leg to the arm of the same side (*hemiplegic form*), and much later to the other leg and arm. In some cases the trouble begins in one or both arms and gradually descends to the legs.

This whole group of symptoms becomes quite conspicuous by the *absence of every disturbance of sensibility, of vesical and sexual weakness, of muscular atrophy and bed-sores; of disturbances of the brain and cranial nerves*, and is thus easily distinguishable from other spinal and cerebral affections already detailed.

Its course is slow and of long duration, and most generally terminates fatally by some other intercurrent disease.

THERAPEUTIC HINTS.—There is no case on record, as far as I am aware of, which has been diagnosed and treated as this particular form of disease. The special hints must be taken from special and peculiar symptoms of the individual case.

Poliomyelitis Anterior Acuta, Acute Inflammation of the Gray Anterior Columns (Anterior Horns).

This affection has also been called: *Spinal infantile paralysis, acute spinal paralysis of adults, acute atrophic spinal paralysis, paralysie atrophique de l'Enfance*, and is marked by the following group of characteristic symptoms: "It begins suddenly, usually with fever, with severe cerebral symptoms (deafness, coma, delirium, general convulsions); there is very rapidly developed and complete paralysis with entire relaxation of the muscles, this paralysis being of very variable distribution over the trunk and extremities, but generally in the form of paraplegia; there is an absence of any severe disturbances of sensation; no paralysis of the sphincters, nor bed-sores.

A rapid improvement of the general condition soon follows; the paralysis proves not to be of a progressive character; indeed, gradual improvement of the same begins, although the restitution of movement is not uniform and remains in part lost forever. In some of the muscles there is extreme and rapidly progressing atrophy, with degeneration of tissue; the development of the bones is retarded; the extremities are cold and cyanotic. During the further course of the affection considerable deformities of the limbs and trunk arise (club-foot, curvatures of the spine, paralytic contractures, etc.). The general condition of the individual is admirable, in spite of the permanent defects in the motor apparatus, which almost invariably remain.

The disease may occur at all periods of life, though it is by far the most frequent in children between the ages of one and four years. It is susceptible of an unusually large number of grades of severity.

The *anatomical lesion*, although not yet quite certainly determined for all cases, may be regarded as most probably consisting in an *acute myelitis of the gray anterior columns* (anterior horns), which may extend more or less over the greater part of their entire length, but is disposed to be most heavily localized in the cervical and lumbar enlargements." (Erb.)

Of its ETIOLOGY nothing is known with certainty.

THERAPEUTIC HINTS.—The initial symptoms may require: **Acon., Bellad., Gelsem., etc.**

Compare Myelitis and Leptomeningitis.

Polyomyelitis Anterior Subacuta et Chronica; Subacute and Chronic Inflammation of the Gray Anterior Horns; Chronic Atrophic Spinal Paralysis.

"*Clinically* the disease presents itself as a motor *paralysis*, usually developed without fever, with but slight general disturbance and insignificant disturbances of sensibility. The paralysis more or less rapidly seizes the entire lower extremities—generally in the course of a few days, or at the most a few weeks—and soon extends to the upper extremities also (much more rarely showing the opposite order of development and beginning in the upper extremities); it is associated with *complete flaccidity of the muscles and loss of their reflex excitability*, and is followed by *rapidly progressive atrophy in the bulk of the paralyzed muscles*, with the well-marked reaction of degeneration.

The disease has certainly, as a rule, an ascending course, though it is by no means always progressive; its development generally comes to a standstill sooner or later, this arrest introducing a gradual retrogression of the disturbances, which may lead to more or less complete recovery.

The *anatomical limits* of the disease cannot, as yet, be declared with absolute certainty; but according to all that we know, there is every probability of its being located in the gray anterior horns. The two post-mortem examinations thus far made virtually confirm this, and thus, for the present, we may designate the disease as a *subacute or chronic inflammation or degeneration of the gray anterior horns*, with extensive disappearance and atrophy of the large multipolar ganglion-cells." (Erb.)

ETIOLOGY unknown. DURATION long.

THERAPEUTIC HINTS.—**Plumbum.** The symptoms of chronic lead-poisoning correspond very closely with the symptoms of this complaint.

Paralysis Ascendens Acuta, Acute Ascending Paralysis.

"The disease is *clinically* characterized by a motor paralysis, which generally begins in the lower extremities, spreads pretty rapidly over the trunk to the upper extremities and usually also involves the medulla oblongata, which sometimes runs its course without fever, sometimes with more or less active fever, which

but slightly involves the general sensibility and the functions of the bladder and rectum, and which runs its course without any notable atrophy of the muscles, and without any diminution or change of their electrical excitability.

In the majority of instances the disease terminates fatally by asphyxia, paralysis of deglutition, and the like; but lighter cases may also end in recovery.

The *anatomical* characteristics of the disease are at present purely negative. No pathologico-anatomical alterations are to be found anywhere, and especially not in the spinal cord, which might explain the picture of the disease. In particular there are no signs of hyperæmia within the spinal cord, of myelitis, of acute destruction of the ganglion-cells or nerve-fibres.

If the disease is therefore to be localized within the spinal cord at all, it is a question of finer, so-called impalpable, disturbances of nutrition, not accessible to our present means of examination." (Erb.)

Of its ETIOLOGY nothing positive is known. Most cases occur between the ages of twenty and forty, some later; men are most frequently attacked.

THERAPEUTIC HINTS.—Consider all the remedies which show paralytic affections. Many cases may have been cured homœopathically without having been recognized as just this particular form of disease.

Coccyodynia

Signifies *pains* in the coccyx and coccygeal region (muscular and tendinous fibres of the parts attached to the coccyx), of great variety of character and especially felt on sitting down or rising up, or straining to defecate, or attempting to exercise, but even during perfect rest. It may be of a *neuralgic* or *rheumatic*, or *inflammatory* nature. It has been observed to originate from "catching cold," especially in damp and cold weather; from falls and blows; from riding on horseback; after parturition and delivery by forceps; after suppression of eruptions. It attacks most frequently the female sex, is often of but short duration, but may be a source of great annoyance for years.

THERAPEUTIC HINTS. — In injuries with crepitation: **Calc. phosph.**

For periodical aching: **Ruta grav., Rhus tox., Silic., Fluor. ac.** (Hering.)

After a fall on the ice; pain worse after sleep: **Laches.** (Raue.)

During the first appearance of catamenia after confinement: **Cicuta.** (Bruckner.)

After confinement, burning and smarting and painful uneasiness in the coccyx, better when standing, worse from slightest motion or pressure. **Tarant.** (Gonzales.)

W. S. Searle gives the following hints:

Bellad., ischia feel sore, as if no flesh were on them, yet she feels better when sitting upon something hard; intense crampy pain in small of back and coccyx; can sit only a short time; cannot lie down well; wakes often at night, and has to shift her position; unable to lie at all upon the back, and is most relieved by standing or walking slowly.

Caustic., dull, drawing pain in region of coccyx; darting and bruised feeling in coccyx; pain in small of back from any movement; pinching, crampy pain in lumbar region and buttocks.

Carb. an., pain in coccyx, which becomes a burning pain when the parts are touched; pressing, bearing-down pain in coccyx, as if bruised; pain as from subcutaneous ulceration, worse on sitting or lying down; pressing, drawing, or stiffness in the lumbar region, as if the back were broken.

Thuja, painful drawing in sacrum and coccyx, and in the thighs when sitting; after having been seated a while, the drawing hinders standing erect; sudden cramp-like pain in lumbar region after long standing, and then attempting to walk; it seems as if he would fall.

Cann. sat., pressure, as if with a sharp point, on the coccyx.

Canthar., lancinations and tearings in the coccyx, causing him to start.

Cicuta, tearing, jerking in coccyx.

Cist. can., burning, bruised pain in coccyx.

Drosera, itching stitch in coccyx when sitting.

Graphit., dull drawing in coccyx in the evening; violent itching of coccygeal region, the part being moist with scurfy eruption.

Kali carb., violent gnawing, at rest and in motion.

Kali hydr., pain in coccyx as from a fall.

Kreosot., drawing pains along the coccyx down to the rectum and

vagina, where a spasmodic, contractive pain is felt; better when rising from her seat; subsequent milky leucorrhœa.

Laches., continual pain in sacrum and coccyx; drawing pain, or as if sprained, in small of back, hindering motion.

Magnes., sudden, piercing pain in coccyx; sudden, violent, concussive, tearing, stitching pain in this region as if the spine were bent back.

Mercur., tearing pain in coccyx relieved by pressing the hand against the abdomen; pain in sacrum, as if one had been lying on too hard a couch.

Mur. ac., drawing, burning along the back, beginning at the coccyx, as if under the skin; burning stitch in sacrum, causing one to start.

Paris quad., tearing in coccyx when sitting; pulsative stitches in coccyx.

Petrol., pain in coccyx while sitting; great uneasiness and stiffness in small of back and coccyx in the evening.

Phosphor., ulcerative pain, hindering motion, and followed by painful stiffness of nape of neck.

Phosph. ac., itching stitch in coccyx; fine stitches in coccyx and sternum.

Platina, numb feeling in coccyx as from a blow.

Ruta, pain from coccyx to sacrum, as if caused by a bruise.

Zincum, pushing, aching, or at times, pinching pain in coccyx; lancination in sacrum; pressure, tension and weakness in lumbar and sacral region; cracking in back when walking.

MOTORY APPARATUS.

Rheumatismus.

We may, as characteristic of rheumatismus, establish the following three points: 1. It attacks either the fibrous tissues, joints, aponeurosis, the sheaths of the tendons, the neurilemma, the periosteum, or the muscles and tendons. 2. It is a peculiar, painful affection, caused no doubt by inflammation, nutritive disturbances; and, 3. It comes on independently of other acute and chronic diseases, or traumatic causes, etc.

The principal CAUSES of its development are exposure to cold and atmospheric influences, though they may not be the only causes; and thus it is agreed among the profession to call *rheumatic* all those affections which are of a very painful and inflammatory nature, which have become localized in any of the above-stated tissues, and which are not of a secondary, or a sympathetic, or traumatic nature, but appear idiopathic; be they caused by exposure to cold and atmospheric influences or not. Its peculiar inclination to change localities is, although of frequent occurrence, not an invariable feature of the disease. Rheumatismus has heen divided according to its location, into—

1. Rheumatismus Articulorum Acutus, Acute Rheumatism of the Joints; Polyarthritis Rheumatica Acuta.

In this form its seat is the synovial membranes of one or several joints. By a nutritive disturbance they become inflamed, and yield a scanty exudation, which contains neither much fibrin nor a great many pus globules. The external visible swelling is the product of an inflammatory œdema of the surrounding cellular

tissue. In severe cases, however, the inflammation may be very high, and the exudation quite rich in fibrin or pus globules. Accordingly, post-mortem examinations show either scarcely any inflammatory signs or a high state of hyperæmia, and ecchymosed spots in the synovial capsule, which is filled with a quantity of purulent exudate; even the ends of the bones may be injected and infiltrated by bloody entravasations. The heart and large vessels, in all recent cases, contain a large amount of fibrin ; and besides, we find different structural changes of the heart, such as pericarditis, endocarditis, and myocarditis, as complications of the acute form of articular rheumatismus.

Predisposition to this complaint seems to lie between the years of fifteen and forty. Early childhood and old age are generally exempt. Those appear most prone to the disease who have once been attacked by it; men more than women, and robust persons more than weak and debilitated ones.

The most frequent Exciting Cause is exposure to cold and atmospheric influences. Often we cannot trace its origin to any cause. It is found in all climates, though more in the middle than in the hot or polar zones; and oftener in winter and spring than in summer and fall.

Symptoms.—An attack of articular rheumatismus is frequently, though not always, preceded by a feeling of general debility and malaise, with occasional chilly sensations. Then the fever commences, and with it the pain in one or several joints. Soon these joints begin to swell, and sometimes to redden; the swelling is not, in all cases, proportionate to the pain. The disease either stays confined in the joint first attacked, or it spreads from joint to joint, attacking even the spine and the symphysis ossium pubis, rarely, however, the joints of the toes. The pain is generally excruciating, worse from the slightest motion or contact, and yet the patient is sometimes tortured by a restlessness which compels him to move, notwithstanding the greatest pain.

The *fever*, in some cases, runs very high, and the temperature of the body ranges at times between 104° and 104.9° F.; this is however, exceptional, as in most cases the temperature is not more than one or two degrees above the natural standard, and the pulse not higher than ninety to one hundred beats in a minute. In some cases we hear murmurs in the heart, even if not complicated with pericarditis; and the respiration is often accelerated. The skin transpires profusely without amelioration, and is often

covered with a red or white miliary rash. The urine is generally scanty and saturated with urates and uric acid; which, on cooling, make a thick deposit.

Its complication with endocarditis amounts, according to Bamberger, to about twenty, and with pericarditis to about fourteen per cent. Complications with myocarditis are much less frequent, and those of pleuritis and pneumonia, meningitis cerebralis or spinalis, occur still less often.

Its course is not at all a regular one, confined to a certain cyclus. It may pass off in from eight to twelve days, and may torment many weeks. It very seldom terminates fatally, and then only in case of severe complication with affections of the heart, lungs or cerebral meninges. Its worst features are an increased liability to new attacks, and chronic derangement of the valves of the heart.

2. Rheumatismus Articulorum Chronicus, Chronic Rheumatism of the Joints.

This form originates chiefly in the acute form, and consists of a subacute inflammation of one or more joints. Post-mortem examination, therefore, reveals the synovial capsule and ligaments thickened, the cartilages of the bones spongiform, and the synovial fluid turbid.

We may distinguish two forms. *One* in which single joints, often for months or even years, remain very painful to motion and contact, and show paroxysms of aggravation, chiefly in the night. On applying the hand to the diseased part, we often observe a sense of crackling or crepitation within on moving the limb. The swelling of the joint may be considerable, or it may be absent; or the joint may only appear swollen, because the adjacent muscles have become atrophied, not being used on account of the pain. This may lead to a false anchylosis of the joint, rarely to the development of a tumor albus or arthrocace.

The *second* form consists of frequently repeated attacks of acute articular rheumatism. Individuals subject to it are appropriately compared to barometers, as they feel, "in their bones," every little change in the weather immediately. It is often complicated with muscular rheumatism, and those forms of neuralgic and paralytic affections which are called rheumatic.

3. Rheumatismus Muscularis, Muscular Rheumatism. Myopathia; Myalgia Rheumatica.

To this form are assigned all those rheumatic affections which are seated in the muscles, tendons, fasciæ, periosteum, and other fibrous tissues, joints excepted. Post-mortem examination furnishes little positive information as to the nature of the complaint. In some cases the muscles have been found interspersed by hard fibrous callosities; in others, some of the peripheric nerves were found thickened and grown together; and in others, nothing at all could be detected. The pain is rather the most characteristic of all the symptoms; it is the so-called "*rheumatic pain*"—tearing, shooting, stitch-like, screwing, burning; sometimes aggravated, and sometimes relieved by motion, rest, cold or warm applications, etc. The swelling and redness is seldom prominent, often entirely wanting. Its seat is of course quite variable, as it may attack any set of muscles in the body. According to its location it has received different names, the principal of which are;

Cephalalgia rheumatica, or that form which attacks the musculi frontales, occipitales, temporales, the galea aponeurotica, or the periosteum of the skull.

Torticollis rheumaticus, Myalgia cervicalis—"*stiff neck*"—has its seat in the cervical muscles, and interferes much with the free movements of the head; frequently draws the neck to one side, and may, if of long-standing, cause a permanent contraction of the muscles of one side of the neck—"*wry neck.*"

Pleurodynia rheumatica, *myalgia pectoralis et intercostalis*, attacks principally the pectoralis major and intercostal muscles. In the first case, it hinders the motions of the arms; and in the second, it interferes with respiration, and makes coughing and sneezing quite painful, simulating the pains of pleuritis.

Omodynia rheumatica, *myalgia scapularis*, is of frequent occurrence, having its seat in the muscles of the shoulders and back; it causes not only great pain on moving the arms, but also when moving the trunk to stoop or to turn.

Lumbago rheumatica, *myalgia lumbalis, kink in the back*, attacks the lumbar muscles and the fascia lumbo-dorsalis. It is a peculiar feature of this affection that it frequently sets in instantaneously: the individual having been moving about freely and without any pain, may in the next minute be unable to rise

from his chair; it comes like a shock, and may remain unabated for eight or ten days.

THERAPEUTIC HINTS.—I have preferred to annex the necessary hints to the end of the chapter on the different forms of rheumatism, because it is not the pathologic form that indicates the special remedy; any one remedy may be indicated in either form; but it is the peculiarity of the individual case which points out the corresponding remedy.

Acon., when there is synochal fever and restlessness; great thirst, dry, hot skin, and scanty, fiery urine; stitching pains in the chest, hindering free respiration, and great agitation of the heart, with anxiety. Articular rheumatism, with hot, pale or red swelling of the joints, shifting sometimes from one to another; after exposure to cold, dry wind.

Amm. phosph., recommended by Kurtz for arthritis nodosa; the joints of the fingers, hands and back are swollen and bent; there is loss of appetite, emaciation, sleeplessness, nervous irritability, evening-fever.

Ant. crud., acute rheumatism, also gout, with gastric symptoms: nausea, vomiting, white tongue and great thirst at night.

Apis, stinging, burning pain with great soreness and lameness of the affected parts, commences on right side and goes to left; œdematous swelling; profuse sweat brings relief.

Apocyn. andr., rheumatism and gout; pain especially in the right shoulder and knee; pain in the joint of the big toe; bilious vomiting, with or without diarrhœa; fever; nervous excitement; sleeplessness; constipation.

Arnica, tearing pain, great soreness, numbness and swelling of the affected parts; worse on slightest motion, and especially when lying and getting warm in bed; fears even the possibility of being touched; complains constantly that the bed or couch whereupon he lies is too hard. *Podagra; pleurodynia;* pressing pain in region of left side below heart, day and night.

Arsen., burning, stinging, tearing pain, with pale swelling of the joints; great debility unto fainting; restlessness, anxiety, especially at night; profuse sweat, which relieves the pain but leaves the patient terribly weak; frequent chilliness alternates with heat; the affected limb has to be moved constantly; external application of heat relieves; *metastasis* to the heart; aggravation every other day.

Aur. mur., continued gnawing, boring pain deep in the joints, after the inflammatory swelling has subsided.

Bellad., pressing, tearing, cutting pain deep in the bones, frequently running from the affected joint along the limbs like electric shocks; coming and going quickly; red, shining swelling of the joints; worse generally at night, from touch and slightest motion, even talking; attended with high fever, hot, dry skin, thirst, throbbing headache and pulsation of the carotid arteries. *Lumbago*, intensely painful sensation of cramp in the lumbo-sacral region and coccyx; can sit only for a short time and while sitting becomes quite stiff and unable to rise again for pain; crampy pains with stiffness in hip and ham, especially on left side. *Torticollis*, right sterno-cleido-mastoid contracted, no inflammation or pain.

Benz. ac., tearing pains as if in the bones, from left to right and from below upwards; irritable bladder, urine of ammoniacal smell; syphilitic and gonorrhœal complications. *Arthritis deformans.*

Berber., *lumbago*, aching pain from above crests of ilia downward and inward to sacrum; aching pain in bladder before and after micturition; burning micturition. (H. V. Miller.)

Bryon., stitching pain, tearing pain, worse from slightest motion; generally the patient does not want to move, but sometimes he is compelled to move by an overwhelming restlessness, notwithstanding the pain. The swelling is not principally confined to the joints and chiefly of a faintish redness, streaking out in different directions. There is almost always loss of appetite, white tongue, feeling of dryness in the mouth without thirst, or else great thirst; nausea; pain in the liver or spleen; dry, hard stool, as if burnt; short breathing, with stitching pain in the sides of the chest; fever; sour sweats; easily irritated and angry. *Pleurodynia, omodynia, lumbago*, muscular rheumatism in general; *metastasis* to the pericardium or pleura.

Cact. grand., metastasis to the heart, with a sensation of constriction in the region of the heart, as if the heart were grasped and compressed, as by a band of iron.

Calc. carb., chronic arthritis, with swelling of the joints, worse with every change of the weather; after working in water; also *omodynia* in right shoulder, or from the left shoulder down along the arm and towards the heart; *lumbago*, cold feeling in gluteal region and aching after Rhus tox., if it did not sufficiently relieve.

Frequent sensation of coldness upon the top of the head; profuse sweat and coldness of the feet; great inclination to perspire; scrofulous diathesis.

Calc. phosph., rheumatic pains in various parts of the body, but especially in places where bones are joined by symphises or sutures; worse in cold weather.

Camphora., according to Kreussler, when the morbid process seems to yield under the influence of the proper remedies but for a short time and then comes back again, attacking part after part of the body, even internal organs.

Carbol. ac., pains feel as if they would be increased by motion, but are not; pains come and go quickly, are worst in hip and shoulder-joints.

Cauloph., rheumatism of the wrists and finger-joints, with considerable swelling; also when shifting from the extremities to the back and nape of the neck, with spasmodic rigidity of the muscles of the back and neck; panting breathing; oppression of the chest; high fever; nervous excitement; delirium.

Caustic., tearing pain with stiffness and swelling of the joints; contraction of the flexors; the pain is worse on exposure to cold air, better in the warmth of the bed; great weakness and lameness of the lower limbs and trembling of the hands. Chronic arthritis; old warts on the eyebrows and nose.

Chamom., drawing pain in the muscles of the upper or lower extremities, much aggravated during the night, with tossing about, as if beside himself, and great irritability of temper; hot perspiration, especially about the head; redness of one cheek and paleness of the other.

China, pain in all the limbs, worse especially from external pressure, so that he is even afraid of anyone coming near him, lest he might be touched; bears hard pressure better than slight touch; intermittent character; great weakness; paleness of the face; bloated abdomen; after severe illness, loss of blood, etc.

Cimicif., *pleurodynia* of the right side of the chest; pain worse from motion, extorting screams; *articular rheumatism* of the lower extremities, with much swelling and heat of the affected parts.

Coccul., when the upper arm or thigh cannot be moved in their joints on account of a lame pain.

Colchic., burning, tearing, or jerking pains; shifting; without swelling and redness, or with only a moderate, pale swelling; constant chilliness even near the hot stove, intermingled with

short flushes of heat; dry skin or profuse sweat, suddenly breaking forth and disappearing again; palpitation of the heart; gastric symptoms before and during the attack; Colchic. is said to be indicated especially when the acute form merges into the chronic, or when, during chronic rheumatism, acute attacks set in; also in metastasis to the heart.

Collin., has been given in diseases of the heart following acute rheumatism.

Coloc., all sorts of pains, with sense of formication and numbness; frequent urination; skin cool; chilliness with inclination to perspire.

Digit., hurried, small pulse, easily affected by motion; strong pulsations of the heart, with an indistinct and muffled sound of the heart; hurried respiration; hurried, abrupt speech; almost complete suspension of the urinary secretion; shining, white swelling of the joints, not very sensitive to pressure; a number of joints are attacked at once; the whole body is pale. (Baehr.)

Dulcam., chronic rheumatism, which gets worse from any little exposure to cold, or any change of temperature from warm to cold; also when rheumatic pains set in after acute cutaneous eruptions, or when the chronic form alternates with attacks of intestinal catarrh.

Ferrum, *omodynia*, either side; pain, especially in the deltoid muscle, of a constant, drawing, tearing, laming nature, worse in bed; has to get up and to move slowly about; worse, also, from being too lightly covered for any length of time; face pale, flushing easily; no swelling.

Ferr. phosph., attacking one joint after the other without leaving the first; joints puffy but little red; high fever. *Kink* in the back.

Gnaphal., gouty pains in the great toes.

Graphit., arthritic nodosities on the fingers; swelling of the toes and balls of the toes; coldness of the dorsum of the feet.

Guaiac., arthritic lancinations and subsequent contractions of the limbs; the pain is excited by the slightest motion and accompanied by heat in the affected parts, especially when the patient has been injured by mercury. It also promotes the spontaneous breaking of gouty abscesses, relieving greatly the sufferings of the patient.

Hamam., is recommended by Ludlam as "a *local application* to all kinds of articular rheumatism." The main characteristic of

Hamam. is the *great soreness* of the affected parts; it may therefore, no doubt, act quite favorably in cases where this soreness is a prominent feature.

Iodium, in chronic arthritic affections, when they are characterized by a violent, nightly pain in several joints, without swelling; previous abuse of mercury.

Kali carb., stitching, tearing pains in joints; shuddering; chilliness; nightly diarrhœa; fulness and pressure in stomach after eating; frequent waking and desire to urinate, with burning; cold feet; hearing impaired; noise in ears. (F. Schelling). *Lumbago*, as if the small of the back were broken; pains shoot down back of thighs.

Kali hydr., large doses, in chronic arthritis with considerable spurious anchylosis. (Hirschel.)

Kalmia, the pains are shifting, changing location suddenly; deltoid rheumatism of both sides, but more particularly the right; tendency to affect the heart; slow pulse.

Kreosot., when the rheumatic pain in the joints, especially in the hip and knee-joints, is associated with a feeling of numbness, loss of sensation, and a feeling as though the whole limb were going to sleep.

Laches., rheumatic swelling of the index-finger and wrist-joint; rheumatic pains in the knees, stinging, tearing, and sense of swelling; swelling of the knees, with tension in the bend of the knees, difficulty in stretching the limb, and pain of the thigh (posteriorly) as if swollen; bluish-red swellings. The pains are generally worse after sleeping; they do not improve after profuse sweats; the left side is generally the most affected; or the affection commences on the left and goes over to the right side. Arthritic contractions of the limbs after the abuse of mercury and quinine; irregular action of heart, and valvular affection.

Lachnanth., *torticollis*, the neck is drawn to one side.

Ledum, rheumatic pains in the lower extremities, in the hip and knee-joints, especially when they commence below and go upwards; pains alternating with spitting of blood; arthritic nodosities with violent pains, which grow worse in the evening, when getting warm in bed, and last till midnight.

Lith. carb., gouty disposition; rheumatic soreness or sudden shocks in region of heart; pains in heart before and during micturition, also before and during the menses; trembling and fluttering of the heart from mental agitation; valvular deficiences.

Lycop., the pain is mostly tearing, oftener on the right side, with and without swelling. In *lumbago*, if Bryon. has not sufficiently relieved, and the pain is worse from the slightest motion. In chronic forms, especially in old people, attended by forgetfulness, vanishing of thoughts, congestion of the head, vertigo, wretched countenance, sour belching, nausea early in the morning, flatulence in the stomach and bowels, causing great distress, constipation of the bowels, urine dark and turbid, or with sediment of red sand, oppression of the chest from flatulence, palpitation of the heart, frequent flushes of heat with nausea, dry skin. The pain is generally worse at night; cannot bear covering.

Mangan., arthritis vaga, shifting from one joint to another, or affecting cross-wise, with shining redness and swelling of the joints; burning spots about joints; pain worse from touch and motion, and at night, causing the patient to moan and groan constantly. *Gout;* left big toe swollen, with excruciating pain radiating upwards; must constantly change position.

Menyanth., painful, spasmodic jerking of the lower extremities in gouty persons, with calcareous deposits in the joints.

Mercur., tearing pain, not relieved by sweat, which is often very profuse and of a musty smell; worse at night, and in the warmth of the bed; worse also in cold and damp air; attacking joints and muscles, with and without swelling; or a mere puffiness of the affected parts, of a pale or slightly pinkish color; collection of saliva in the mouth of a copperish taste; slimy tongue; bitter or sweetish taste; foul breath; violent pain in decayed teeth; swollen gums; swollen glands of the neck, painful when swallowing; griping in the bowels with diarrhœa, especially towards evening, with frequent urging; constant feverishness; internal heat, with chilliness and perspiration; sleeplessness and restlessness at night; great debility. Complication with cardiac, pulmonary, pleural and meningeal inflammation.

Nux vom., especially in rheumatism of the trunk, limbs not excepted; gout, in its incipient stage, in habitual drinkers; oversensitiveness to pain; constipation; during hard stool, violent pain in the affected part; scanty, dark urine; heat mixed with chilliness, especially when moving; perspiration relieves. *Torticollis*, head drawn to left side; after fright.

Phosphor., drawing, tensive pains, from slightest exposure to cold, with vertigo, oppression and sense of lameness and weakness in the lower limbs.

Phytol., rheumatism of back and hip-joints. (A. E. Small.) Chronic form; obtuse, heavy, aching pain, generally worse in damp weather; with and without swelling; periosteal rheumatism with syphilitic taint; nightly aggravation; enlargement of the glands of the neck and axilla.

Platina is recommended by Elb for the incipient state of endo- and pericarditis, in consequence of articular rheumatism, especially when there is immense anxiety and great palpitation of the heart.

Pulsat., drawing, tearing pain, frequently shifting from one part of the body to another, or attacking only one side; usually attended by swelling and redness; pale face; slimy mouth; bitter taste; loss of appetite; no thirst; constant chilliness, with heat in the affected part; chilliness of left side; mild, quiet, tearful disposition; *worse* towards evening and at night in the warm room; *better* from changing position and moderately moving about in the fresh air; from drinking cold water and from uncovering the affected part.

Rhodod., nightly drawing-pains in the periosteum from wet, cold and stormy weather; worse during rest, disappearing when moving.

Rhus tox., drawing, tearing pains in fibrous tissues, joints, and sheaths of the nerves, attended with a sense of lameness and formication in the affected parts, with or without swelling and redness, caused by exposure to wet, damp weather, to rain, by bathing or straining; *worse* during rest and when commencing to move; *better* from continued motion and dry, warm, external applications; great restlessness. *Lumbago.*

Ruta, wrists and feet; puffy swelling about the insteps; sour sweat.

Sabina, chronic arthritis and gout; the patient cannot bear a heated room; he feels decidedly better in the cool air and in a cool room; better from sitting erect, from moving and stretching; feeling of deep-seated inward trouble; melancholy and sad.

Salic. ac., inflammatory rheumatism of the joints, with great swelling and redness; high fever and excessive sensitiveness to the least jar; motion impossible.

Sanguin., right arm swollen, can't be raised, but moved laterally; sensation of coldness in arm, which no amount of clothing can remove; stiff neck, pain in shoulder; trapezius sore to pressure and painful on movement.

Secale, *kink* in back. (Schüssler.)

Silic., in chronic gouty nodosities.

Spigel., when complicated with endocarditis or pericarditis.

Spongia, with heart affection, wakening after midnight with sense of suffocation.

Sticta pulm., inflammatory, articular rheumatism, especially of small joints, with circumscribed redness; subsequent synovitis, with exudation. (Price.)

Sulphur, chronic rheumatism; *podagra;* tearing, stitching pain; or when, after Bryon., the stitch-pain leaves, and a dull, aching, pressive pain remains; sleeplessness; hot head and cold feet.

Tart. emet., *lumbago;* slightest effort to move causes retching, cold, clammy perspiration and excruciating pain.

Thuja, rheumatic and arthritic pains, especially of a sycotic or gonorrhœal nature; sweating of the parts not covered; those which are covered keep dry; sensation as if the whole body were very thin and delicate, and could not resist the least attack, as if the continuity of the body would be destroyed.

Ver. alb., electric jerks in the affected limbs; worse in bed; necessity to sit up and let the legs hang out of bed, or must walk about.

Ver. vir., rheumatism, especially in left shoulder, hip and knee; also recommended in endocarditis and pericarditis. High fever; red streak through centre of tongue, with coating upon either side.

Zincum, general, articular rheumatism, with tearing pain, lameness, and trembling or crampy pain; or twisting in the affected limbs, and frequent jerking of the whole body during sleep.

4. Gout, Podagra, Arthritis.

Gout differs entirely from rheumatism in the form of its attacks, (of which, later,) by the overcharge of the blood with uric acid, by its never attacking children, and only grown persons after thirty years of age, and men oftener than women, especially such as are accustomed to a rich table and the habitual use of beer or wine, and who take very little bodily exercise. It is, therefore, a very rare occurrence to find a poor man suffering with podagra. According to statistics its main cause is a hereditary disposition, which is generally aroused into activity by overcharging the blood with nitrogenized substances, and a want of exercise to consume the too-liberal supply.

The repetition of diverse acute attacks of gout and its chronic form causes peculiar changes in the joints which it attacks. We find in and around them, besides the ordinary signs of inflammation, a chalky deposit, consisting principally of urate of soda, and less frequently of compounds of uric acid with lime, magnesia and ammonia. This deposit either lines the internal surface of the synovial capsule like a soft mush, or incrustates the cartilages of the bones as a hard mass, or even fills the whole joint as though it had been injected with plaster of Paris, growing hard and causing anchylosis. At the same time gouty deposits may take place on the external surfaces of the synovial capsule, on the tendons and in the surrounding cellular tissue, and give rise to hard nodosities, *tophi*. In some persons similar deposits have been observed on other and different parts of the body, especially in the skin.

The course of an acute attack of gout is as follows: The gentleman in question generally does not dream of what may happen to him over night. He feels fine; he has enjoyed a good dinner and supper as usual, the proof of which we can read in his face; his cheeks are full, round and of a florid complexion, only his nose looks a little suspicious. There we observe a fine network of enlarged capillary blood-vessels, tinging it rather redder than would be necessarily required for a good-looking nose. He is fat, and his stomach and belly are in quite a prosperous condition, looking very well cared for. It may be, though, that in the last few days he did not feel altogether right; his appetite may not have been quite as sharp, his sleep not quite as refreshing; he may have had some palpitation of the heart and his urine may have been saturated and turbid. All this, however, is generally overlooked or attributed to some imprudence in diet. Then, all at once in the night, generally after midnight, the gentleman is aroused by a burning, screwing pain in one of his big toes, which gets worse from hour to hour. If the toe were screwed between a vice, the pain could not be worse, and the poor sufferer, unaccustomed to such severe handling, moans and groans and tosses about without avail. The toe soon commences to swell and redden; there is great thirst, high fever, dry skin, saturated urine and great mental irritability. Finally, towards morning, a remission of the violent pain takes place; the day passes along comparatively easy, until next night the same violent paroxysm recurs. In this way it goes on for about a week, when, finally,

the pain, redness and swelling gradually dissappear, and, at last, the skin of the affected toe peals off. This is a first attack of **Podagra.** Gout almost always commences in this way. In later attacks, however, other joints may become involved. If, then, it attacks the *finger-joints,* it is called **Chiragra;** if the *knee-joint,* **Gonagra;** if the *shoulder-joint,* **Omagra.** These acute attacks are at first far apart. Years may intervene between them, but finally the intervals grow shorter and the acute, regular attacks become *chronic* and *irregular.*

Such chronic, irregular attacks often last for weeks and months, and always cause the above-stated deposits in and around the affected joints. They are generally not quite so painful, nor attended with as high a fever as an acute, regular podagra: they are always preceded by digestive derangements, and they attack several joints at the same time. After the attack subsides, the swelling does not, but remains at first soft and doughy, until at last it changes into a hard tophus, which grows with each subsequent attack. Such hardened, chalky deposits within the joints frequently give rise to the formation of abscesses, which break and discharge masses of pus mixed with calcareous substances.

At still other times this morbid process attacks internal organs, such as the *stomach, brain* or *heart;* then it is called *anomalous gout.*

Gout of the stomach manifests itself as a very severe cardialgia, with violent vomiting, frequently even of blood; **Gout of the brain,** as a kind of apoplexy, or violent headache, vertigo, furibund delirium, and subsequent stupidity and sopor; and **Gout of the heart,** as irregular palpitation of the heart, disturbed circulation, dyspnœa and syncope.

It might be quite difficult to diagnosticate these spells as gout, if it were not that they are almost always preceded or succeeded by gouty manifestations on the peripheric organs. This settles the question. Gout is a stubborn disease, but is not fatal unless complicated with other diseases, or in consequence of the organic mischief which it produces in the course of time, in the form of a lingering cachexia, or apoplexia, or angina pectoris.

THERAPEUTIC HINTS.—As the principal exciting cause of its first development is high and lazy living, this, of course ought to be stopped, as a first step.

In *acute attacks* the following are principally indicated: Acon., Arnica, Arsen., Bryon., Calc. carb., Sabina, Sulphur.

In chronic gout the main remedies are: Amm. phosph., Calc. carb., Caustic., Coloc., Guaiac., Iodium, Lycop., Mangan., Natr. mur., Sabina, Silic., Sulphur.

For special hints compare Rheumatism.

5. Arthritis Deformans.

"This disease, also described under the names of **Arthritis sicca, spuria, nodosa, pauperum, rheumatoides, arthroxerosis, Malum senile, articulorum, Rheumatismus nodosus, Polypanarthritis, Rheumatic gout, Nodular gout,** is applied to an inflammatory process of the joints, which produces chronic changes but never suppuration of the joints. It affects the nutrition of *all* the constituent parts of the joint, causing, on the one hand, abnormal proliferation, on the other, absorption; and so the whole shape of the joint becomes deformed." (Senator.)

There are two varieties of arthritis deformans, *one beginning in the smaller joints of the extremities,* and the other, *in the larger joints of the trunk* (vertebral column, hip), subsequently extending towards the periphery, and by preference called the "*senile*" form.

The *peripheric* variety is much more common in *women* than in men, and is essentially a disease of the *poorer* classes. Developing towards the thirtieth year of life, it increases in frequency among women about the climacteric period, and is caused chiefly by prolonged exposure to cold and damp, by inadequate food, debilitating hæmorrhages, unduly protracted lactation, grief and anxiety, by manual labor (sewing, knitting, laundry-work, in women, watch-making, in men).

The *senile* variety is more common in *men* than in women; it begins at the age when senile changes (atheromatous degeneration of the arteries, calcifications, etc.) commence to develop, and it attacks the rich no less than the poor. Thin people appear to be specially predisposed to it.

The Symptoms consist of *neuralgic pains* in the parts affected, which lose by slow degrees their *mobility;* the articular ends of the bones become thickened, and gradually displaced, and when moved produce a peculiar *grating,* which can be distinctly felt through the soft parts. There are also not seldom excrescences and nodular masses around the joints, while the muscles and

soft parts in the neighborhood of the joint, or even of the entire limb begin to *waste*. In the smaller, peripheral joints the disease spreads invariably *symmetrical*, which appears not quite so obvious in the senile form. The fingers from the index to the ring-fingers, more rarely the little finger also, are flexed and dislocated at the metacarpal end of the first phalanges, usually towards the ulnar side, less frequently towards the radial side. The thumbs generally remain free, while the great toes are more frequently and more severely attacked than their neighbors. An attack of the *hip* and *knee, shoulder* or *elbow-joints* shortens the respective limb; an attack of the *vertebral column* (*spondylitis deformans*) produces stiffness and rigidity of the spine, with pains radiating from the back; an attack of the *cervical vertebræ* prevents bending or rotating the head; an attack of the *dorsal* and *lumbar spine* shortens and twists the body. Cases occur where even the lower jaw, the clavicles, in fact all the joints of the body became implicated.

The process of the disease is very slow, but steadily progressing in paroxysms which are usually attended with severe pain and slight febrile disturbances. The urine shows a diminution in the amount of phosphoric acid.

THERAPEUTIC HINTS.—Calc. phosph., Phosph. ac. Compare the hints under Rheumatism.

Rachitis, Rickets.

Other names by which this disease is known are: **Rachitismus, Morbus anglicus, Articuli duplicati, Zweiwuchs, Doppelte Glieder.** Its character consists essentially of an irritation of the osteo-plastic tissue in consequence of which there is an overgrowth of the same, with less earthy salts than are required for the formation of healthy bone. Heitzmann asserts that this irritation of the osteo-plastic tissue be brought about by the influence of *lactic acid* (phosphorus exerts a similar influence), and that, when combined with a deficiency of lime in the food, it be capable of producing true rickets. This supposition agrees with the frequency of its development during the first two or three years of life, and with the fact that an excess of lactic acid has been detected in the urine of rickety children. After the third year the disease develops much more rarely, and between the age of five

and puberty it is quite an exceptional phenomenon; sometimes it develops already in utero.

As Causes have been mentioned: hereditary influences, chronic tuberculosis in the father, constitutional syphilis in the parents; cold, damp, ill-ventilated dwellings.

Its Premonitory Symptoms are: intestinal and bronchial catarrh, feverishness and restlessness towards evening and through the night, perspiration about the head, slow, irregular teething. After a while changes in the bony structure become apparent. The articular ends of the long bones swell.

The prominence of the contiguous epiphyses, for instance of the upper and lower arms, is so marked, that the joint between them forms a depression which gives the appearance of two elbows, hence the name **Articuli duplicati**, or **Zweiwuchs** (double growth). The fontanels and sutures of the skull delay closure, and the occipital bone becomes soft and flexible, and may often be depressed by the finger as though it were of parchment. This softness extends over the entire bony structure, and is the cause of the deformities which the bones undergo in consequence of the force of the muscles attached to them and of the weight of the body. The legs usually exhibit an outward curve and become bow-shaped, while the thorax appears laterally compressed, causing the breast-bone to project like the keel of a boat (chicken-breast). The junctions of the ribs with their cartilages become thickened and nodular, and appear like the beads of a rosary. The spine often becomes curved, the pelvis flattened in its antero-posterior diameter, or otherwise deformed, and the growth of the child in length delayed. The hairy part of the head is unchecked in its growth, and the head seems unduly big and often sinks down between the shoulders; the abdomen is very prominent, and in advanced cases the child looks like a dwarf.

In mild cases or such as come early under judicious treatment, the deformities do not reach this grade; by a renewed activity of growth the morbid process may be checked without leaving any marked thickening of the bones behind.

There have been observed some cases of an *acute* nature in which within a few weeks the epiphyses of all or of most of the long bones become swollen, where there were swellings on the cranial bones, and a simultaneous swelling of the gums and palate, with digestive derangements and fever, the whole process running its course within a period of a few weeks, terminating

either in recovery, or in death by complications, such as pneumonia, meningitis, etc.

THERAPEUTIC HINTS.—It ought to be ascertained, whether the milk which the child receives is of a proper condition. When the child has been fed on paps and other mere farinaceous food, its diet ought to be changed to nitrogenous substances, such as rare beefsteak, mutton chops, etc.

When, notwithstanding the most proper kind of nourishment, the disease still develops itself, the child needs medicinal aid.

For the preceding *chronic diarrhœa* compare the corresponding chapter.

For the swelling of the bones compare—

Aselli jecoris oleum, which is best used in the form of a trituration with sugar. It is not at all necessary to give the oil by the spoonful.

Bellad., curvature of the lumbar vertebræ; squinting; enlarged pupils; pain in the throat when swallowing; thick, protruding belly.

Calc. carb., slow, difficult teething; profuse sweating about the head; fontanels open; abdomen enlarged; whitish, frothy diarrhœa; curvature of the spine and deformities of the extremities.

Calc. phosph., not less important than carbonica; its principal indications are the fontanels, which remain wide open, the diarrhœa and the emaciation of the child. Both the Calc. carb. and phosph. have been administered in large, crude doses with far less good results than in a fine homœopathic preparation.

Previous abuse of mercury may call for Asaf., Aurum, Hepar, Iodium, Sulphur; and still other peculiarities of the case may point to Angust., Fluor. ac., Lycop., Mercur., Mezer., Phosphor., Phosph. ac., Sepia, Silic., Staphis., Symphytum, and others.

Malacosteon; Mollities Ossium: Osteomalacia, Softening of the Bones.

Rachitis consists of a deficient calcification of the growing bone, malacosteon, on the contrary, of a gradual withdrawal of earthy salts from the already formed bony structure. It is a chronic disease peculiar to adult life, and especially to women who have passed through one or more pregnancies. It usually begins during pregnancy, with an active congestion and proliferation of cor-

puscular elements, which is followed by the removal of earthy salts. The real cause of this decalcification of the bones is still a matter of conjecture. Damp dwellings, however, seem prominent among the exciting causes.

Malacosteon is a very rare disease. In some cases the morbid process is confined to the pelvis and spine, in others it spreads over all the bones of the skeleton. The calcareous constituents being extracted, it is obvious that the whole frame loses its form. In this way originate curvatures of the spine; the pelvis, from the pressure of the legs, flattens in on both sides and projects in front with its pubic region; the extremities become flexible, yielding to any pressure in any direction, and in some cases it has been observed that women of a stately size gradually shrunk down to a dwarf's figure.

The disease commences with severe boring and tearing pains in the affected bones, worse on motion and better at rest, and usually attended with more or less fever; the saliva and secretions of the skin are said to contain appreciable quantities of phosphate of lime; the general condition may, in some cases, for a long time be not essentially affected, while in others the general system shows early signs of a deep-seated cachexia.

THERAPEUTIC HINTS.—I do not find a single case mentioned in our literature. However, Arnica, Rhus tox., or Symphytum, after difficult confinement; and Calc. carb. and phosph., Fluor. ac., Phosphor., Silic., and others, as constitutional remedies, might be suggested.

Progressive Muscular Atrophy.

The character of this disease consists in a *gradual atrophy* and *fatty degeneration* of certain muscles, which in the course of time spread further, involving progressively more and more of the muscular tissue.

On post-mortem examination, we find, therefore, (1), the muscles diminished in size; (2), the muscular fibres changed from red to a pale and yellowish color. On applying the microscope it appears that this process commences with a change of color of the muscular fibres which are growing paler and a disappearance of their transverse striæ. Later we observe fat-globules in the centre of the ultimate fibrils, and at last a disappearance of the fibrils

themselves, so that the sarcolemma or sheath which envelopes the ultimate fibrils, shrinks together, containing only single fat-globules.

This degenerating process does not take place simultaneously in all the fibres of a muscle; we find on the contrary in the same muscle fibres thus degenerated and others perfectly healthy, until by degrees all are involved in the same morbid process.

Some authors have thought, that this morbid process within the muscles be the consequence of a disease of the nerves at their roots, because in some cases there have been found on post-mortem examination quite conspicuous structural changes in the anterior roots of the spinal nerves. Yet in other cases nothing of the kind could be detected. And as the muscle retains its susceptibility to the electric currents as long as there are any muscular fibres left, whilst in the case of degeneration of the peripheric nerves this susceptiblity to the electric current leaves at quite an early stage: it seems to follow, that those authors are right, who have considered the progressive muscular atrophy as a *primary* affection of the *muscles* themselves.

It is found in all classes of people; seems, however, to attack women oftener than men; appears to be in some cases hereditary and in others brought on by overexertion of the muscles, or by taking cold; whilst in still others it could not be traced to any special cause.

This disorder creeps on very slyly, mostly without any pain or any other apparent disturbance of the body. Commencing generally in the muscles of one hand or one shoulder, or in the muscles of the neck, rarely in the muscles of the face; the first apparent symptom is a weakness in the parts involved, a loss of muscular power, which is associated by a diminution of their volume. The attacked parts grow flat and shrink away. We find therefore in such cases the prominent muscles of the thumb gone, and the spinal processes sticking out, when the muscles of the neck have become atrophied. If these atrophied muscles are exposed to a cold draught of air (if we for example blow upon them), we observe at once a vibratory motion of the muscular fibres, a jerking of single fasciculi. This is quite a constant symptom of the disease. Its pathognostic sign, however, is the susceptibility of these muscles to the electric current, which causes a contraction in them, as long as there are any fibres left, distinguishing it thus from any paralysis which has its cause in a morbid condition of the nerves.

The atrophy and fatty degeneration and consequent paralysis may stay confined to the parts first attacked, but in other cases it creeps on, involving progressively all the muscles supplied by the cerebro-spinal nerves, with the exception of the muscles of the heart and the intestinal canal. Thus gradually, in these terrible cases, the patient becomes incapable of moving himself, of feeding himself, of expressing any mental emotion by his face; of talking, and lastly, even of swallowing. It takes years, before death releases him out of this terrible bondage, if not intercurrent disease shortens his sufferings.

THERAPEUTIC HINTS.—The electric current, by induction or faradisation, persistently used, has improved cases where the disease remained confined to single parts of the body.

Arg. nitr., **Arsen., Cuprum, Plumbum, Caustic., Laches., Sulphur.**

Osteitis, Caries, Necrosis, Exostosis.

Osteitis is an inflammation either of the periosteum, or of the bone itself, or of its diploë or its medullary membrane, or of all these different structures together. It may be caused by external injuries, such as fractures, bruises etc., or by chemical influences; or it may be the consequence of certain constitutional contaminations, like a scrofulosis, arthritis, scurvy, syphilis, mercurial poisoning, or suppressed acute or chronic skin diseases.

Its symptoms generally consist of a deep-seated, heavy, boring pain, which assumes a tearing character when the periosteum is affected at the same time. This pain is usually worse at night (especially if of syphilitic origin) and worse also from pressure and motion. There is generally a feeling of heat in the bone, and if the inflamed bone is superficial, its integuments soon participate in the inflammatory process. Febrile actions are mostly wanting, except in acute cases. Such an inflammation may terminate in

Caries, by which we understand an ulceration of the bony structure; or even in

Necrosis, which means a dying off of a portion of the bony structure, which, in favorable cases, is gradually thrown off and replaced by a new formation.

In other cases the inflammation causes an exudate upon the bone, which hardens and grows fast to the bone, thus augment-

ing its natural size more or less considerably; this is called Exostosis.

THERAPEUTIC HINTS.—**Angust.**, caries, especially of the long bones; great longing for coffee, the use of which must be entirely prohibited; great sensitiveness of mind, very touchy, easily irritated from the least provocation.

Asaf., osteitis, caries in scrofulous individuals, and after the abuse of mercury; bluish redness and swelling of the external parts; ulcer with bluish hard edges, which are very painful to the slightest touch; discharge of thin, very offensive pus. Pulsations in the pit of the stomach, perceptible to the eye and hand; ill-humor and irritated mood.

Aselli jecor. ol., in different affections of the bones, in scrofulous subjects, especially when the extremities of the bones are affected; fistulous ulcers, with raised edges, easily bleeding, and discharging a flocculent pus and ichor of a nauseating smell.

Aurum, caries of the nasal bones in consequence of ozæna, diffusing a most horrid odor; caries of the cheek bones and exostosis of the skull and other bones, with boring pain, after the abuse of mercury.

Aur. mur., caries of the left external malleolus, after allopathic drugging. (Linsley.)

Bellad., scrofulous individuals with glandular swellings, crusts on the corners of the mouth and sore, swollen and bent vertebræ; exostosis on the forehead, and caries of the palatine bones.

Calc. carb., osteitis, with swelling; caries and necrosis of scrofulous individuals; diarrhœa, hard, bloated abdomen; chronic symptoms on the scalp; emaciation.

Calc. phosph., for similar affections, and especially after fractures, when the callus does not ossify.

China, caries, especially where there is profuse suppuration.

Fluor. ac., caries in consequence of syphilis or abuse of mercury; caries of the temporal bone.

Iodium.

Lycop.

Mercur, osteitis, caries; pain, as if the part were broken.

Mezer., periostitis and swelling of the bones, especially on the tibia, with the most violent nightly pains in the bones.

Nitr. ac., especially in syphilitic affections and after the abuse of mercury.

Phosphor., exostosis on the skull, with violent tearing and boring pains, worse at night; swelling of the glands of the neck; sour belching and vomiting; burning in the mouth, œsophagus and stomach; constipation; emaciation; fainting when raising the head; lame weakness of the extremities.

Phosph. ac., osteitis, and also when after an external injury of the periosteum there remains a feeling as though the bone were scraped by a knife.

Ruta, periostitis and pains in consequence of external injury, with erysipelatous inflammation of the external parts.

Silicea, one of the most important remedies in the different affections of the bones, with fistulous openings and discharge of thin pus and bony fragments.

Staphis. is recommended, especially in osteitis of the phalanges of the fingers.

Sulphur, after suppressed itch and mercurial poisoning.

Tuberculosis of the Joints, White Swelling.

Tuberculosis being a constitutional disease, may localize itself in various parts of the body. When localizing in the joints, it attacks by preference the hip-, knee-, ankle-, elbow-, or wrist-joints, and was called by older writers, on account of the peculiar glossy, shining appearance of the affected joint, "*white swelling.*" "In its incipiency we find the synovial membrane injected, somewhat opaque, and here and there softened or thickened by fibrous exudation. There is effusion of lymph, which assumes a pulpy consistence of a pale yellowish or greenish color. The articular cartilage is of a dull whitish or slightly grayish aspect, and somewhat thickened, softened and partially separated from its osseous connections. The cancellated structure of the bones is abnormally vascular, light, porous, humid, and at the same time easily broken and cut. Not unfrequently its cells are distended, with yellowish tubercular matter, of a semi-solid, osseous consistency; or, this substance presents itself in the form of distinct masses, free or encysted, and, perhaps, not larger than a millet-seed. The ligaments appear abnormally red, tumefied and softened. The synovial fluid is generally increased in quantity, but rarely to any considerable extent. In its further progress, the lymph gradually increases in quantity, and is often intermixed with a little seropurulent matter, or thick, greenish-looking pus. The synovial

membrane is partially destroyed, and what remains is of an opaque, muddy and ragged appearance. The cartilage is ulcerated, pulpified, discolored, perforated and almost completely detached. The bony structure is very red, soft, carious, rough, and easily crumbled. The ligaments exhibit well-marked signs of inflammation, being loose and spongy at one joint, attenuated at another, and perhaps thickened or hypertrophied at a third. In this way the structures of the joint are completely subverted, with hardly any trace of their original appearances. Pus is more usually seen, often, indeed, in large quantities, sometimes thick, pultaceous, caseous, ichorous or sero-sanguinolent. In some instances it is very thin and almost black, evidently from the effects of the necrosed condition of the bones.

"In case of recovery, the joint will be found to be filled by a white, fibrous, organized substance; the extremities of the bones being anchylosed, or firmly attached by new matter to the surrounding structures. It is very rare that a new socket is formed; and yet this is not impossible. In time, the artificial joint may admit of considerable motion, but, in general, this is extremely restricted. Occasionally an imperfect ligament is formed round the bony remnants, and the surface of these bony remnants may even become slightly tipped with cartilage. Finally, osseous growth—short, irregular and friable—sometimes make their appearance upon the bones, in the vicinity of the former disease." (Gross.)

This is the general character of the pathological changes which tuberculosis causes, when located in the joints. I shall now speak of the several joints which it attacks in preference, causing affections which are not unfrequently met with in practice.

Coxarthrocace, Coxalgia, Hip Disease.

This affection is most frequently found from the third to the seventh year. Growing out of a constitutional diathesis, it may be excited by external injuries, exposure to cold, or different, wasting diseases; sometimes it comes on stealthily without any appreciable cause. It seldom, or never, attacks both hip-joints, but is frequently complicated with psoas abscess, ophthalmia, pulmonary phthisis and degeneration of the lymphatic glands.

In its first stage, we observe that the child is easily tired, and complains of a pain in the *knee*, on the inner side, which is worse

from motion, so that the child limps when walking; this pain is likewise worse in the night, and frequently attended with spasmodic jerking of the extremity, disturbing sleep. The knee itself shows neither swelling nor discoloration. Gradually the pain extends to the thigh and leg, and in some cases it is felt most keenly in the tendo Achillis, or over the instep; or it shifts from one place to another; or may disappear for a short time entirely. Finally, after weeks and even months, the pain is also felt in the hip and its neighborhood; and then most intense and persistent directly over the articulation, deep-seated and of a dull, gnawing character. Up to this time there is no perceptible impairment of the general state of the system. By and by, however, during the *second stage*, when the pain in hip and knee increases still more in violence, when the buttock flattens, the gluteo-femoral crease disappears and the limb apparently grows longer, with nightly spasmodic twitchings and wasting of its muscles: then we also find the sleep habitually disturbed by unpleasant dreams, and frequent starting of the patient out of sleep with crying and screaming; the appetite becomes impaired, the bowels often constipated, and there is more or less fever, especially at night, followed frequently by copious sweats. Now the patient begins to show a care-worn countenance; he grows peevish and irritable, and loses flesh and strength.

In the third stage matter forms within the diseased joint. "This is indicated by an increase of pain on the slightest motion; by a sense of throbbing and tension, deep and persistent; by severe swelling of the gluteal region, generally most prominent at the centre of the articulation; by œdema of the subcutaneous cellular tissue; by a remarkably turgid and enlarged condition of the subcutaneous veins; by violent rigors, followed by high fever and copious sweats. As the matter increases in quantity, it gradually works its way towards the nearer surface; its approach being denoted by the occurrence of a circumscribed, erysipelatous blush. Here there is generally distinct fluctuation, and the parts, feeling soft and baggy, soon yield at one or more points, followed by the escape of the contents of the sac." (Gross.)

These openings may in different cases form in different places: in the gluteal region, either directly above the joint, or in its immediate vicinity; on the upper and back part of the thigh, below the great trochanter; on the upper and inner surface of the thigh; on the superior and external part of the groin; on the sacro-

sciatic notch; or on several points, either simultaneously or successively. Or the matter may partially escape internally, when the bottom of the acetabulum is perforated, into the rectum, bladder or vagina; or it may collect in a sort of pouch, between the inner surface of the iliac bone and the soft parts of the pelvis.

By this time the limb has actually grown shorter from one inch and a quarter to several inches, and the foot points either directly forwards and outwards, but oftener inwards. The thigh is generally flexed upon the pelvis, and turned either towards the sound limb or is bent off from it. The great trochanter generally lies directly over the acetabulum, or in its immediate vicinity; whilst the head and neck of the femur are usually so much wasted as to exist only in a rudimentary form. Dislocations of the femur are exceedingly rare; and are possible only in such cases where there is an extensive destruction of the soft parts; allowing the superior extremity of the bone to move about, and to insert itself into a new position.

THERAPEUTIC HINTS.—Arsen., third stage; the child is emaciated, exhausted; very restless; has diarrhœa, worse in the middle of the night; wants to drink constantly, but little at a time. It is indeed going fast if Arsen. should not soon change the scene for the better.

Bellad., burning, stinging in the articulation; nightly aggravation, with starting in sleep, fever, and congestion of the head; or drowsiness, with inability to go to sleep. Cramps in glutei muscles; outer hamstring feels as if contracted; inability to walk.

Calc. carb., second stage; sweat on the head during sleep; scratching the head impatiently when getting awake; frequent desire for boiled eggs; abdomen hard and bloated; inclined to diarrhœa, especially towards evening; glandular swellings on the neck.

Calc. phosph., third stage; it puts an end to the further destruction of the bone, stops suppuration and promotes new organization.

Carb. veg., third stage; ichorous, offensive, blackish discharge; deeply-sunken state of the whole organism.

China, profuse suppuration, sweat, and diarrhœa.

Coloc., second and third stage; difficult urination of dark urine; green diarrhœa; lies upon the affected side with bent-up knee; the pain is of a crampy nature, as though the parts were screwed in a vice.

Hepar, suppurating stage, with fever and sweat, where the patient wants to be tightly covered.

Iodium, intermittent, sharp, tearing pain between the left hip and the head of the femur, increased by moving the joint; glandular swellings; abuse of mercury.

Kali carb., third stage; crampy tearing in the hip-joint and knee; bruised pain in the hip-joint when moving and sneezing; twitchings of the muscles of the thigh; dull pain in the side of the knee when walking, and especially when extending the limb; starting when asleep; twitching of the limbs during sleep; all the symptoms worse towards three o'clock A.M.; great tendency to start, especially when being touched.

Laches., in any stage, if there be a regular aggravation of febrile motion in the afternoon about three o'clock, an aggravation of general malaise after sleep, a notable offensiveness of the alvine discharges, even if of a natural consistence, and previous abuse of mercurial preparations; before or after Laches. is frequently indicated

Lycop., when there is an aggravation of fever and suffering, especially from four to eight o'clock P.M.; great fear of being left alone; violent jerking of the limbs and body, awake and asleep, and great crossness on awaking out of sleep.

Mercur., first and second stage, with prominent aggravation in the night, restlessness and inclination to sweat; is frequently indicated before or after Bellad.

Phosphor., hectic fever; dry, hacking cough; chronic diarrhœa; urine turbid on voiding, precipitating a white sediment on cooling; thin, watery pus oozing from the diseased joint.

Rhus tox., first and second stage; on pressure upon the trochanter, pain in the hip-joint; pain in the knee predominant; swelling of the glands of the neck; crusty eruptions on face and head; after exposure to rain; worse in damp, cold weather.

Silic., in suppuration and caries of the bones anywhere, one of the most important remedies; pale, earthy complexion; loss of smell and taste; stoppage of the nose or acrid coryza; the parts upon which one lies easily go to sleep; any little sores or wounds are apt to fester; glandular swellings.

Stramon., according to Dr. Jeanes, always indicated when the *left* hip is affected. I have given Stramom. with great success wherever abscesses form, if attended with violent pain, driving one mad.

Sulphur., psoric individuals; frequent redness and inflammation of the eyelids; heat of the head, and cold hands and feet; frequent red spots in the face; is averse to being washed; morning diarrhœa, or constipation; sleepy in the daytime, and wakeful at night; easily perspiring.

Gonarthrocace, Tumor Albus Genu, White Swelling of the Knee.

Gonarthrocace, growing upon the same constitutional contamination as hip-joint disease, runs through nearly the same phases as that disease, and is most frequently excited by an external injury, such as a fall, twist, or blow upon the knee.

At first there is a severe, dull, heavy, gnawing pain at the inner condyle of the femur, at the lower part of the patella, or at the inside of the head of the tibia; seldom at the outer part of the joint; it may be intermitting, and it may be continuous in its character, extending up and down the limb, and depriving the patient of all sleep and rest.

After a while the parts commence swelling, owing partly to interstitial deposits, and partly to an increase of synovial fluid. This swelling is at first most conspicuous in front and at the sides of the patella, effacing the normal depressions in that region, and replacing them by soft, fluctuating bags. "A similar prominence, often of great size, exists just above the joint, over the lower part of the femur, bounded inferiorly by the patella, and on each side by the lateral ligament, its anterior wall being formed by the tendon of the exterior muscle. Very little tumefaction ever occurs in the popliteal region, even in the more advanced stages of the disease. The skin is tense and glossy; the subcutaneous veins are abnormally large; the knee is stiff, if not immovable; and the leg, more or less flexed, is swollen and œdematous, while the thigh is remarkably atrophied. In proportion as the ligaments yield, the deformity of the joint increases, owing chiefly to the displacement of the head of the tibia, which allows the muscles to draw the leg outwards, so as to give it a twisted and contorted appearance. Occasionally, though rarely, there is an actual enlargement of the diseased bones. The fluctuation, which constitutes so prominent a symptom in the earlier periods of this complaint, often, in a great measure, if not entirely, disappears during its progress, owing to the adventitious deposits upon the

synovial membrane, and the absorption of the redundant synovial fluid. Whenever this is the case, the swelling, instead of being soft and yielding, will be comparatively firm and resisting; but it still possesses some degree of elasticity, often so deceptive as to lead to the idea that the joint contains a good deal of fluid, and which nothing but the most careful examination can dispel." (Gross.)

Lastly, though not always, the involved structure commences to suppurate, and the matter may either be absorbed, or may escape at different places about the knee—very rarely, though, in the ham—forming numerous fistulous openings, and leading to caries and necrosis of large portions of the diseased bones.

THERAPEUTIC HINTS.—**Acon.**, after exposure to severe cold.

Arnica, after a fall or blow, and **Rhus tox.**, after a twist, sprain or strain, may severally be entirely sufficient to ward off all serious consequences.

Arsen., third stage; discharge of fetid pus; œdema of the legs; hectic fever; sleeplessness; emaciation; exhaustion.

Bellad., red, shining swelling, with throbbing pain and enlarged blood-vessels along the limbs.

Bryon., pale swelling, with stitching pain from slightest motion.

Calc. carb., scrofulous individuals; too early and too profuse menstruation; pot-belliedness; looseness of the bowels; glandular swellings.

Iodium, second and third stage; fistulous openings, discharging a thin, watery ichor, and being surrounded by pale, spongy edges, which bleed easily; feverishness; emaciation. After the abuse of mercury.

Kali hydr., doughy, spongy swelling of the knee, without fluctuation; skin tense at times, red in spots and hot. Inside, a feeling of heat; gnawing, boring pain at night, necessitating a constant change of position. After a fall.

Laches., **Lycop.**, compare the preceding chapter.

Mercur., after suppressed itch; nightly pains, etc.

Pulsat., fever, dryness of tongue, without thirst; diarrhœa; scanty and delaying menses.

Silic., violent, lancinating pains; caries; fistulous openings; cachectic condition.

Sulphur, psoric individuals. Besides, compare Coxarthrocace.

Bursitis.

The *bursæ mucosæ* are closed sacs, analagous in structure to synovial membranes, and secreting a similar synovial fluid. Those concerning us now are situated over the patella and the inner side of the head of the tibia. Being greatly exposed to external pressure and irritation, they are subject to inflammations like the synovial membrane, constituting an affection known under the name of **Bursitis**, or **House-maid's knee**, the latter on account of its frequent occurrence among female servants, who induce it while working in a kneeling position. It is distinguished from synovitis by its superficial nature and the regularity of its tumefaction. In acute cases it is attended with severe pain, swelling and fever; it may terminate in suppuration, or, when becoming chronic, in the formation of a solid tumor.

THERAPEUTIC HINTS.—**Sticta pulm.** has been found, by Dr. E. C. Price, of great efficacy.

Arnica and the remedies mentioned in the foregoing chapters may likewise need consideration in special cases.

Silic., in chronic bursitis.

Podarthrocace, Abscess of the Ankle-joint.

Commencing with pain, this affection soon shows signs of a swelling just in front of each malleolus, filling up the hollow which naturally exists there. So also gradually disappear the grooves at the side of the tendo Achillis, and the whole joint swells considerably. By and by, if suppuration takes place, the pus may escape at different places, forming, like in the knee-joint disease, fistulous openings, and may lead to considerable destruction of the affected bones.

THERAPEUTIC HINTS.—Compare the preceding chapters. Only one remedy, not mentioned there, I must add here, namely:

Angust. In a case where none of the very carefully-selected remedies seemed to have any effect, this remedy at once arrested the morbid process and brought it to a perfect cure. In this case, the condyles of the tibia were quite seriously involved, and it was on account of a remark of Aegidi, "Angustura acts especially upon the long bones," that this remedy was given with so happy a result.

Malum Pottii, Kyphosis, Angular Curvature of the Spine; Spondylarthrocace.

When the disease has already developed to a visible backward curvature of the spine (hunchback), its diagnosis is easy enough, only that it comes too late. Of much greater importance are the symptoms of the initial stage: *the child cries whenever it is taken hold of below the ribs, with spasmodic drawing up of the legs, and shortness of breath.* Besides this there are: *periodical pains in the epigastric region;* listlessness and disinclination to move; disposition to lie flat on the stomach or side, only rarely on the back. Finally as the disease progresses, one or more spinal processes project backward in an acute angle, the head sinks backward between the shoulders, and when walking the child props the arms on its thighs or knees, instinctively supporting the spine, and avoiding all motions which would necessitate a bending of the spine. All this is produced by a *tubercular affection*, or according to other writers, by an *inflammatory process* of the vertebræ, causing the bones to become carious and to crumble away, or to form abscesses. Probably both views are correct. The tuberculous form seems hardly ever to induce congestive abscesses, which are more apt to occur in endosteitis. Both forms no doubt grow out of a general contamination of the system, *scrofulosis*, and where this condition exists, an unlucky fall or wrench may be sufficient to induce the development of the disease. So also it has been observed to often follow after measles, and especially whooping-cough. The disease is always of a slow and tedious nature.

THERAPEUTIC HINTS.—As the spinal column gradually loses its fitness to sustain the body in an erect position, the horizontal position will make itself in many cases necessary; but too long a confinement in bed has other quite serious objections, and it has, therefore, been an object of many physicians to invent means by which the strain of the spinal column may be relieved. The most simple and effectual of these means seem to be Sayre's *starched bandage*, by which chest and abdomen are enveloped in fold after fold, until a compact casing of the material surrounds the trunk, capable of retaining the bony column in a fixed position. This is done while the patient is suspended by the armpits, and the head held in an erect position; the weight of the

body straightens the spine. As soon as the starch is well dried and stiffened, the patient is liberated and left to his freedom.

Calc. carb., or **phosph.** after Sulphur, when the known scrofulous symptoms call for its use.

Natr. mur., has been recommended by Kafka as a constitutional adjuvans to **Phosphor.**

Phosphor., main remedy of Kafka. Its symptoms will indicate its use in special cases.

Psorin., proposed by Lilienthal as being fairly indicated by its symptoms.

Silic., indicated by its characteristic action upon inflammatory processes of bony structures, and also by the peculiar symptom: "sweating of the head only."

Sulphur, is according to Jahr the remedy to commence with, if indicated by the general condition of the patient.

If excited by external injury: Acon., Arnica, Hyper., Rhus tox.

Other remedies recommended: Angust., Arsen., Asaf., Aurum, Bellad., Calc. jod., Hepar, Lycop., Mercur., Mezer., Phosph. ac., Plumbum, Pulsat.

Compare also Rachitis and the foregoing chapters.

Bunion.

What bursitis is to the knee, *bunion* is to the metatarsal joint of the great toe, an inflammation of the bursæ situated in this joint, in consequence of undue pressure of shoes or boots.

Arnica often relieves the acute symptoms, and **Calc. carb.** frequently cures chronic cases.

Ingrowing Toe-nails.

Compare: Colchic., Graphit., Kali carb., Magnet. austr., Mar. ver., Natr. mur., Phosphor., Silic.

Perchloride of Iron has been used externally to dry the inflamed parts. (Wahle.)

NERVES.

The *anatomical diseases* of the peripheral nerves comprise:

1. Neuritis, Inflammation of the Nerves.

This may be *acute* or *chronic*. The *acute* form, usually brought on by external injuries, or neighboring destructive processes (sloughing, cancer), begins with chilliness, or an actual rigor, being followed by fever, headache and sleeplessness, and is attended by severe pain, starting and extending from the injured spot over the region to which the nerve is distributed. In some cases a *red line* in the skin indicates the course of the inflamed nerve, and the skin-surface of its distribution exhibits a marked degree of *hyperæsthesia* with the subjective sensation of *numbness* and formication.

The *chronic* form is characterized by *pain* and *paræsthesia* in the area of distribution of a certain nerve, by motor and sensory irritation with subsequent paralysis, by painful swelling of the nerve.

The most important remedy for neuritis in consequence of external injury is **Hyper. perf.** (Hering.)

2. Atrophy of the Nerves

Is most frequently the consequence of inflammation, compression or central disease, and can only be reached so far as the original disease is amenable to treatment.

3. Hypertrophy and Neoplastic Formations in the Nerves.

Hypertrophy of peripheral nerves, that is an increase of the nerve-fibres in number, great thickness of the medullary sheath and

even of the axis cylinder, or oftener an interstitial hypertrophy of the connective tissue, is of a mere anatomico-pathological, but of no clinical interest.

Neoplastic formations in the nerves, also called *neuromata*, are made up either of *true nerve-tissue* (**Neuromata vera**), or are *composed of any other tissue*, giving rise to Fibromata, Myxomata, Sarcomata, Carcinomata, Syphilitic gummata, Lepra nervorum, all known under the general name **Neuromata spuria.**

Their Etiology is obscure, and "an exact anatomical diagnosis can be accomplished with certainty only by means of the microscope. When no tumors can be demonstrated by external examination, their presence can be concluded only with some probability from the existing nervous disturbance." (Erb.)

The *functional diseases* of the peripheral nerves comprise:

1. Hyperæsthesia, Anæsthesia.

By means of the sensory nerves we receive external impressions. Light affects the optic, sound the auditory, perfume the olfactory, sapid substances the gustatory nerves, palpable things the nerves of touch, and heat, cold, etc., the nerves of general feeling.

These nerves are so constituted that they bear external influences to a certain extent with perfect ease, although we find in even healthy individuals a great difference in this respect. Some perceive the slightest, others only more powerful influences; but, as a general rule, the ordinary influences of the outer world are borne by all with equal ease.

In this disease, however, it is often different. We observe that ordinary light, the slightest noise, the least touch, etc., are unbearable. This condition is called *morbid sensitiveness.* It is frequently in combination with a state of fidgetiness and restlessness, and then it is called *nervousness.*

Post-mortem examinations do not reveal the least alterations of the nerves, and its seat may just as well be referred to the primary faculties of the mind, of which the corresponding nerves are merely the bodily organs, by which the mind lies open to external influences.

Anæsthesia of the sensory nerves is the opposite to morbid sensitiveness—a want of natural sensibility; to which we might add *numbness, pithiness,* either in consequence of pressure upon a nerve,

or in consequence of central disturbances, by which its normal action is interfered with.

THERAPEUTIC HINTS.—Compare Boenninghausen's Repertory.

Sensitiveness to light, (principally) Acon., Arsen., Bellad., Euphras., Mercur., Rhus tox., Sulphur.

Sensitiveness to noise, Aurum, Coffea, Lycop., Sepia, Spigel.

Sensitiveness to smell, Aurum, Bellad., Lycop., Mercur., Phosphor., Sepia.

Sensitiveness to taste, Bellad., China, Coffea.

Sensitiveness to touch, Arnica, Bellad., Coffea, Hepar, Lycop., Nux vom., Pulsat., Sepia, Spigel.

Nervous debility, China, Coccul., Nux vom., Phosphor., Pulsat., Silic.

Fidgety disposition, Anac., Bellad., Hyosc., Mercur., Rhus tox., Sepia, Staphis., Stramon., Zincum.

Pithy, numb feeling, Coccul., Hyosc., Lycop., Oleand., Opium, Phosph. ac., Stramon.

2. Neuralgia.

Neuralgia literally means a pain of the nerves. In this sense of the word, any and every pain would be a neuralgia; because there is no pain possible without sensitive nerves.

This is not the sense in which the term *neuralgia* is used.

Hasse defines it in the following language: "Neuralgia characterizes itself physiologically as an irritation in the course of one or several sensory nerves, which irritation may exist on any part of the nerve, from its origin down to its termination, and which irritation is felt as *pain;* not, however, only in the place where the irritation exists, but also in different other places of the same nerve; sometimes even through its whole length." Such irritation and consequent pain may be occasioned by the most different causes, so that neuralgia may be a symptom of very different conditions. Structural changes of the nerves themselves, however, are very rarely found, and then only in paralytic conditions. Those coarser structural changes which we have called tumors of the nerves, or neuroma, may exist without any neuralgia; and the most violent neuralgia may not show a trace of structural change on post-mortem examination. We cannot, therefore, so clearly define neuralgia pathologically as other forms

of disease; as, indeed, it is only a symptom of the most different conditions.

Such conditions are either *peripheral* or *central.*

1. PERIPHERAL CAUSES are either organic changes of the nerves themselves—most frequently in consequence of external injuries—or organic changes in neighboring parts of the nerves, as inflammation, caries, and exostoses of the bones, especially in the neighborhood of the foramina, through which the nerves make their exit; also tumors—especially carcinoma and aneurisma—and affections of the liver, uterus, ovaries, kidneys, etc.

2. CENTRAL CAUSES are structural changes in the brain and spinal cord, and their membranes, consisting of tumors, softening, sclerosis, and deposits of morbid products. Besides these causes we may also mention exposure to cold, metallic poisoning—especially by mercury and lead—and miasmatic influences, which latter cause a periodical type, like intermittents.

SYMPTOMS.—1. *Pain.* It is of various kinds: boring, cutting, tearing, burning, like lightning, but always described as excruciating. It generally comes in paroxysms, and is felt in many cases distinctly running along the course of a certain nerve. It is often provoked or aggravated by softly touching or stroking the parts, whilst hard pressure frequently relieves it.

2. *Concomitant symptoms.* They consist of affections of the *motory* nerves, causing spasmodic motions in those parts in which the affected sensory nerve branches out, prosopalgia and almost always distortions of the face; of affections of the *vaso-motory nerves,* which manifest themselves in paleness of the skin and chilly sensations, followed by heat and turgor, sometimes by profuse perspiration or profuse secretion or scantiness of urine; of affections of the *trophic nerves,* causing change of color in the hair, falling off of the hair, or thickening or atrophy of various tissues, or a disposition of the skin to various inflammatory processes, such as erythema, erysipelas, pemphigus, urticaria and zona.

The most important special forms of neuralgia are:

1. Cephalalgia; Hemicrania or Migræna, or Nervous Sick Headache.

Cephalalgia or headache, or pain in the nerves of the head, may be attendant upon the most various morbid conditions of the

body, to which some persons are more liable than others. We have headache from anæmia and from active hyperæmia, also toxic, hysterical, rheumatic and sympathetic headaches.

Hemicrania or *Migræna*, or *nervous sick headache* on the other hand is a peculiar form of half-sided headache, which, by some, has been considered as a neuralgia of the temporal, frontal and occipital nerves, or as a hyperæsthesia of the brain, or a cerebral neuralgia, or as a hysterical manifestation of some derangement of the menstrual function, while Du Bois Raymond took it for a neurosis of the vasomotor nerves, consisting of spasms of the vascular muscles of the affected side, causing paleness and contraction of the features and dilatation of the pupils, and Moellendorf considered it as a paralysis of the vascular muscles, which manifests itself in dilatation of the central retinal and choroidal vessels of the affected side, in a slower pulsation of the heart, in a soft and large pulsation of the carotids and temporals, and in cold hands and feet. Both agree in this that hemicrania be due to alterations in the cerebral circulation, in the one case produced by spasm and in the other by paralysis, of the vascular muscles, both induced by a disturbance of the sympathetic nerve either in its cranial or cervical portion.

This complaint, which is so frequently met with, returns periodically. It generally commences in the morning, increases during the course of the day as the sun ascends, and reaches its culmination in the evening; very often it attacks only one side of the head, or passes from one side to the other, or is confined to the top of the head, or to the forehead or occiput. It often reaches an almost unbearable pitch, is associated with nausea, and generally ends with gagging and vomiting of bitter, greenish, or slimy masses. In some cases one thorough vomiting is sufficient to relieve the pain, while in others both retching and pain continue for several hours, until, finally, a sound sleep relieves it all. During the paroxysm the patient is very sensitive to light, noise, strong smells, and touch; he seeks a dark, quiet place where he can lie undisturbed.

Migræna is most frequently met with in women of a hysteric, chlorotic, or anæmic tendency, and a weak and nervous constitution, also in married women who have no children, and in young widows. Men of weak constitution, who read and study much in the night, or who lead a loose life, are likewise subject to migræna. In all, it seems that the habitual use of coffee and tea has a great deal to do with its periodical recurrence.

THERAPEUTIC HINTS.—**Acon.**, in full-blooded individuals; rush of blood to the head; the pain is centered in glabella, excruciating, driving to despair.

Aethusa cyn., pressing pain in the forehead, as though it would split; or as if there were a tight hoop around the head; eyes appear protruded and the face is pale; great anxiety and restlessness drives into the open air, which relieves. At its height, vomiting, belching; hiccoughing; finally diarrhœic stool; some hours sleep and pain in the stomach for several days.

Agar., pressing pain in right temple, as if a nail were thrust in, worse sitting, better moving about slowly; dull, drawing headache, worse in morning, extending into root of nose, with nosebleed or thick mucous discharge; headache from overwork at desk.

Amyl. nitr., hemicrania, worse on left side; the affected side looks pale in comparison with the sound one.

Ant. crud., headache after bathing in the river, from deranged stomach by alcoholic drinks; thick, white coating on tongue.

Aranea diad., when the spells come at regular hours; flimmering before the eyes; dizziness in the head, which obliges the patient to lie down; on rising a feeling as though the head and hands were bloated and swollen.

Arg. nitr., pressive pain in the forehead on getting awake in the morning, gradually extending from the supraorbital ridge upwards to the coronal suture, with heaviness in the head and vertigo, which does not turn in a circle, but inclines the patient to reel to the one or the other side; dimness before the eyes; ringing in the ears; sense of relaxation in the stomach, as though it were hanging down loosely; all the symptoms better after eating a good dinner and drinking a glass of wine; worse after drinking coffee; or the pain is *half-sided* in one of the frontal protuberances, or close to the side of the glabella near the supraorbital ridge, or in one of the temples, sometimes extending down into the bones of the face; the pain is of a pressive, screwing, throbbing nature, and is always preceded by general indisposition; chilliness; loss of appetite; growing dim before the eyes, and nausea. At its height it is attended with *trembling of the whole body* and a deadly nausea, which ends with vomiting.

Arnica, periodical spells, commencing slightly in the morning in the forehead, with flickering before the eyes, which is aggravated by reading or writing, gradually extending through the

temples into the occiput, and reaching its acme in the afternoon. A warm room is unbearable, but the open air does not ameliorate; must lie perfectly quiet, stretched out upon his back; worse from any motion, quick walking, bending, going up stairs, talking, thinking, and after eating.

Arsen., hemicrania in persons with affections of the liver; alternating bilious colic and migræna; great sensitiveness of the head to the open air; during the spells the patient is very restless, constantly moves the head and limbs to and fro, and imagines that he gets some relief from so doing; better from external warmth; from wrapping the head up in warm cloths; he feels extremely prostrated; thinks he must die; feels chilly and hovers near the stove.

Bellad., one-sided pain, especially on the right side; throbbing, beating, attended with vertigo, congestion of the head and eyes, and throbbing of the carotid arteries; or great paleness of the face; pain worse on lying down, better on bending head backward, and external pressure.

Bryon., headache on first waking in the morning, gradually increasing until evening; pain as though the forehead would burst; worse from any motion, coughing, or sneezing. Tongue thickly coated; violent thirst or only dry feeling in the mouth; gastric derangement; constipation or diarrhœa in the morning; the patient is very irritable and cross; gets angry easily.

Cact. grand., pain in *right* temple by spells, brought on often by a glass of wine, by attending the opera, after getting his dinner at too late an hour; it commences in the morning and increases as the day advances to an awful height, with vomiting. He must lie perfectly quiet; any attempt to keep up, any noise, light or exertion, increases the suffering terribly; constant dry nose.

Calc. carb., chronic cases; after days before or after the menses which are profuse, pain centering in top, as if she should go crazy; after suppressed eruptions; strange feeling of coldness in some part of the head, or in the whole head; pain worse from early in the morning after getting awake until afternoon; cold, sweaty hands and feet.

Calc. phosph., headache of children from going to school; from change of weather with other rheumatic pains, especially about sutures and symphyses.

Camphora, throbbing pain like a hammer in the cerebellum, synchronous with the beats of the heart; after sunstroke.

Chamom., commences with flickering and fiery zigzags before the eyes so that one cannot see or read, followed by terrible headache.

China, the pain is increased from slight touch, from opening the eyes, or from keeping them shut; sometimes the pain is relieved by lying down, at other times the patient cannot lie down; better while moving about gently, or sitting up erect. Nursing females after loss of vital fluids.

Chin. sulph., intermittent neuralgia at regular hours.

Coccul., the pain is worse after eating, drinking or smoking and attended with a sense of emptiness and hollowness of the head.

Coffea, when the pain drives to despair and the patient runs wildly about the room.

Coloc., pain, tearing, and screwing together; great restlessness and anxiety, with sweat, which smells like urine; urine scanty and fetid; after chagrin and indignation.

Ferrum, congestion of the brain; throbbing; crimson face, which, at other times is quite pale and earthy-looking. The pain drives one out of bed.

Gelsem., commences with dimness of sight and double vision; vertigo; heaviness or lightness of head; wild feeling, alternating with uterine pains; worse about 10 A.M., and when lying down; better from shaking head, from sitting and reclining the head on a high pillow, from profuse emission of urine.

Glonoin., congestion of the brain; throbbing, pulsating pain from below upwards, with fulness and feeling of enlargement of the head; it feels like the motion of waves in the brain; congestion of the eyes; ringing in the ears; palpitation of the heart. During pregnancy, before the menses, or when the menses do not appear; from heat of sun.

Hepar, headache over the eyes pressing down upon the eyes; covers tightly even when hot and perspiring.

Ignat., throbbing pain in the occiput, worse from pressing at stool; from smoking, from the smell of tobacco-smoke; for nervous subjects who get frightened easily, feel hurt easily, etc.; intermittent from 9 A.M. to 2 P.M., worse from washing hands in cold water, bending head forward, stepping heavily; better from soft pressure, lying on back, and heat.

Iris vers., beginning with a blur before the eyes; of hepatic or gastric origin, with nausea and vomiting; mostly on right side, or changing sides in different attacks.

Laches., temporal nerves of one side painful, with throbbing in the temples; heat in the head; vertigo with paleness of the face; pain in the left ovarian region; bloatedness of the stomach; frontal headache after suppressed coryza.

Lil. tigr., terrible, tearing, crazy pain running from back up into top of head, with a feeling as if she would lose her reason, or would lose her soul when dying. Squeezing feeling about the heart.

Melilot., congestive headache, better from bleeding of nose.

Menyan., pressing pain in forehead and temples from above downwards, relieved by firm pressure with the hand.

Natr. mur., commencing in the morning when getting awake; it gets worse from reading, writing, and talking; and is frequently indicated when school-girls, who apply themselves closely to their lessons, get a severe headache.

Nux vom., pressive, boring, dull pain, mostly over left eye, commencing in the morning, increasing through the day, growing milder in the evening, attended with dimness of sight, stoppage of the nose, sour and bitter vomiting; constipation; palpitation of the heart; worse from mental exertion, light and noise, in the open air, after eating; brought on by masturbation, hysteria, with profuse menses, sedentary life, close mental application, abuse of coffee, with hæmorrhoidal disposition, constipation, disturbances in the ganglionic system.

Phosphor., intense pain in eyes and whole head, worse in left eye, in forenoon, or from stooping, better while eating, lying down, and after sleeping.

Phosph. ac., dreadful pain on the top of the head, as though the brain were crushed, after long-continued grief.

Platina, cramping pain, as though the part were in a vice, especially above the root of the nose, with heat and redness of the face, tearful disposition, and too early and profuse menstruation.

Pulsat., tearing, pressing, stitching pain, mostly on right side of head, worse in the evening and at night, in the warm room, better from external pressure and in the open air, with aversion to eating and drinking; water tastes bitter; nausea; vomiting; oppression of the chest, and chilliness; mild, yielding disposition; scanty, delayed menses; disposition to looseness of the bowels.

Rhus rad., commencing in the back of neck, the muscles are

sore to touch, it spreads up and over entire head; worse in rest and cold, better on moving and warmth; brought on by cold draught on back and neck, and cold, damp and rainy weather.

Sanguin., the pain commences in the back part of the head, rises and spreads over the head, and settles especially above the right eye, with nausea, vomiting, and chilliness; the patient is obliged to seek a dark room and to lie perfectly still; flushes of heat; burning of the soles of the feet; scanty urine at first, later profuse flow of clear urine.

Sepia, the pain is jerking upwards, like an electric shock, or boring; worse from motion, better from holding the eyes shut; pale, yellowish, dirty color of the face; white tongue; aversion to food; sour taste after eating; constipation; obstruction of the portal system; leucorrhœa between the menses; irregular menses; bearing down of the womb.

Silic., pressing, throbbing pain in the occiput upwards, also from occiput to eyeballs, especially the right one, worse from every quick exertion, pressing to stool, etc., better from getting warm, and after sleep; the pain is attended with a peculiar exaggeration of the mind; when crossed, he has to restrain himself from doing violence; appetite good; while eating the pain is much milder, but grows so much the worse again afterwards; brought on by exposure of the back to any slight draught; better from wrapping the head up warmly.

Spigel., different sorts of pains, frequently extending into the eye and side of the face, always worse from stooping, slightest motion, concussion, noise, and during stool; they are apt to appear at regular hours, either in the forenoon or in the night, and are mostly attended with paleness of the face, palpitation of the heart, and oppression of chest.

Sulphur, pain in the forehead and top of the head; heat in the head and coldness of the feet; flying heat in the face; nightly sleeplessness; itching of the skin; suppressed eruptions; looseness of the bowels early in the morning, driving out of bed; hæmorrhoids, etc.

Thuja, hemicrania of sycotic origin, mostly worse soon after midnight.

Veratr., pain very violent, driving one to despair; or prostrating, causing fainting; cold sweat and great thirst; great nausea, vomiting and diarrhœa, or obstinate constipation.

Zincum, in chronic cases of cerebral affections; great weakness

of sight; stitching pain in the right eye; paleness of face; now and then vomiting; fidgetiness of the legs.

2. Neuralgia of the Trigeminus or Fifth Nerve, Prosopalgia, Neuralgia Facialis, Dolor Faciei Fothergillii, Tic douleureux.

It attacks one or the other branch of the trigeminus, sometimes the n. supra-orbitalis or infra-orbitalis, n. facialis, n. infra-maxillaris, and, therefore, some authors speak of a neuralgia supra-orbitalis, neuralgia infra-orbitalis, etc. The affection is almost always confined to one side; rarely does it attack both sides, but there appears to be no difference in favor of one or the other side. An extension from one side to the other has been occasionally observed.

The pain is generally spoken of by the patient as indescribable, excruciating, coming on in paroxysms of shorter or longer duration, sometimes irradiating into the back part of the head and neck, down into the shoulder, intercostal spaces, breast and even the lower extremities.

We likewise find the motory nerves affected, causing jerking of different muscles of the face, spasmodic closing of the eyelids, bending of the body double, trembling of the whole body, etc. We also find the vasomotory nerves affected, causing pulsation of the arteries, swelling of the veins, redness, or paleness, and heat of the face. The whole affected side of the face assumes a different expression, becomes shining, glistening, greasy, sometimes appearing puffed and at other times emaciated.

When the ramus ophthalmicus is affected, we observe a reddening of the conjunctiva and flowing of tears; if, at the same time, the second branch is also affected, we observe a watery and slimy discharge from the nose; and when the second and third branches suffer, it is often attended with a flow of saliva.

Sometimes there has been observed a partial sweat in the face during the paroxysm; the hair of the affected side grows brittle and splits, or falls out.

THERAPEUTIC HINTS.—**Acon.**, cheeks red and hot; the patient seems beside himself for pain, screams and rolls about in the bed or on the floor.

Arg. nitr., during the paroxysms, unpleasant, sour taste in the

mouth. Wolf mentions Arg. nitr. as of general importance in this complaint.

Arsen., burning, stinging pain, as of red-hot needles, worse about midnight; face pale and distorted; puffed around the eyes; great restlessness; ameliorated by external warmth; typic paroxysms of a miasmatic origin.

Bellad., cutting, tearing pain, shooting from the side of the face up into the temple, into the ear, and down into the nape of the neck; worse from touch and motion; hard pressure sometimes relieves; the paroxysms mostly occur in the afternoon; the face is generally flushed; the eyes water and the muscles of the face twitch; the patient cannot bear light nor noise; the right side is the most frequently affected; after the abuse of mercury.

Bismuth nitr., the most excruciating pains are somewhat relieved by taking cold water in the mouth and walking briskly about.

Calc. carb., pain from right mental foramen along lower jaw to ear, attended with frequent urination; worse from cold air; better from warm air and warm applications.

Caustic., right side, from the cheek-bone to the mastoid process, worse at night; better from rubbing with a cloth dipped in cold water; chilliness; scanty menses.

Chamom., the pain causes hot perspiration about the head, and extorts screams; the patient is wild and unruly, tossing and rolling about; menses usually profuse.

China, the pain is in the infra-orbital and maxillary nerves, worse from the least touch, lying down, and in the night; great weakness after the paroxysm.

Chin. sulph., the paroxysms set in at the same hour every day; the intervals are free of pain, and there is no complication with gastric or other derangements.

Cimicif., especially when the neuralgia is a reflex-pain dependent upon ovarian disturbances.

Coloc., tensive tearing with heat and swelling, especially left side, also right side; motion and touch increase the pain; better in perfect rest, and from external application of warmth; brought on by chagrin and indignation.

Ferrum, during the paroxysms the face gets fiery red, sometimes only in one spot; cannot keep the head quiet; at the intervals the face looks earthy and pale.

Gelsem., orbital neuralgia in distinct paroxysms of acute pain,

accompanied with contractions and twitching of the muscles near the portion of the face affected; with extreme general nervousness and loss of control over the voluntary muscles, giving rise to odd, irregular motions.

Hepar, in chronic cases; the pain streaks from the cheek-bone into the temple, ear, alæ nasi, and upper lip of the affected side; it is worse in the fresh air, and better from wrapping up the face; at the same time coryza, hoarseness, much sweating and rheumatic pains elsewhere; especially after the abuse of mercury or metallic preparations.

Iris, pain in the head, temples and eyes, attended with most distressing vomiting of a sweetish mucus, and occasionally (if attended by much straining) of some bile.

Laches., left side, orbital neuralgia; lachrymation; previous to the paroxysm rising of heat to the head; during the intervals a weak, nauseous feeling in the abdomen. Waking out of sleep the eyes feel as though they had been taken out and squeezed, and then put back again; malarial affections.

Magn. carb., left or right side; shooting like lightning; worse from touch, draught, change of temperature; cannot stay in bed, must walk the floor.

Magn. phosph., supra-orbital and infra-orbital nerves pain at intervals and relieved by external warmth.

Mercur., tearing pains, worse at night in bed; it often starts from a decayed tooth and involves the whole side of the face, which may be red and swollen; profuse secretion of saliva; constant inclination to perspire; restlessness and sleeplessness. Brought on by taking cold.

Mezer., ciliary neuralgia, especially after operations on the eye; prosopalgia, left-sided, from over the eye to the eyeball, cheek, teeth, neck and shoulder; lachrymation; conjunctiva injected; parts sensitive to touch; worse from warmth; periodical from 9 A.M., increasing to 12 M., and decreasing gradually until 4 P.M., leaving the patient perfectly free from pain. Also boring, pressive pains, coming like lightning, which leave the parts numb; they are worse from eating warm food, also from entering a warm room after walking in the fresh air; they are attended with chilliness and shuddering; twitching of the muscles of the affected parts, flow of saliva, redness of the fauces, burning in the throat, stiffness of the masseters, red spots on the nape of the neck, and formication in the skin of the chest; after the abuse of mercury, or in syphilitic patients.

Natr. mur., pain in the malar bones, worse when chewing; falling off of the whiskers; intermittent prosopalgia; after the abuse of quinine.

Nux vom., tearing pain in the course of the infra-orbital and middle branch of the trigeminus, with redness and watering of the eye; flow of clear water from the nostrils, and numbness of the affected side; the patient is morose, irritated, belches a great deal and is constipated; after the abuse of coffee, liquors, quinine, etc.; also intermittent prosopalgia; worse from noise, motion, cold air; better in a warm room, at rest and lying down.

Phosphor., drawing and tearing pain in the jaws, root of the nose, eyes and temples, attended with bloatedness of the face, congestion of the head, tearing on the top of the head, vertigo, and ringing in the ears; from taking cold over the wash-tub.

Platina, boring pain, cramp-like; painful feeling of numbness in the malar bones and the mastoid processes and chin, as if the parts were between screws, attended with anxiety, weeping, and palpitation of the heart; profuse menses.

Pulsat., twitching, tearing pain, worse in the evening and in a warm room; in persons of a mild, tearful disposition, and phlegmatic temperament; inclination to looseness of the bowels; scanty menses; after getting the feet wet; after the abuse of quinine.

Rhodod., right side; by wind and changes of weather, better from warmth, and relieved while eating and for some time after.

Rhus tox., drawing, burning, tearing pain in the face, and a feeling as though the teeth were too long, attended with great restlessness, necessity to move about; relieved somewhat by the external application of cold; dysenteric stools, with jelly-like evacuations; after exposure to rain.

Sanguin., in upper jaw extending to nose, eye, ear, neck and side of head; shooting, burning pains; kneel down and hold head tightly to the floor. (Hering.)

Sepia, intermittent prosopalgia, with congestion of eyes and head; also during pregnancy; jerking, like electric shocks, upwards.

Spigel., tearing, shooting, jerking or burning pain in all directions, suddenly coming and going, attended with dark redness of the affected side; flow of water from the eyes and nose; twitching of the muscles in the face; difficulty of breathing; palpitation of the heart; rheumatic pains elsewhere; worse in damp weather, from touch and motion; after suppressed intermittents.

Stannum, intermittent supra-orbital neuralgia from 10 A.M. to 3 or 4 P.M., gradually increasing until attaining its acme, and then again decreasing as gradually; after abuse of quinine.

Staphis., the pain starts from a decayed tooth; is worse from slight and better from heavy pressure; it is attended with swelling of the gums, cold sweat in the face, and cold hands.

Stramon., prosopalgia, with many nervous symptoms: spasms of the chest hindering breathing; swooning; weeping; twitching of the muscles of the face; frowning; jerks through the whole body; delirious talk, with open eyes.

Sulphur, intermittent periodic neuralgia every twenty-four hours, worse generally at 12 M. or 12 P.M., or midsummer or midwinter; chronic cases, when other remedies relieve, but do not cure; psoric tendency; scanty, black, tarry menstrual discharges.

Thuja, after suppressed gonorrhœa or eczema on the ear.

Veratr., drawing, tearing pain, attended with bluish paleness of the face; sunken eyes; coldness of the extremities; trembling and jerking; cold perspiration; great exhaustion; nausea and vomiting.

Verbasc., violent pain, jerking, like lightning, or pressive, numbing; aggravated by pressure, sneezing, talking, chewing or a draught of air; appears at the same hour every day, 11 A.M. till 4 P.M., and is attended with headache, redness of the face, vertigo, belching, and a discharge of tough saliva from the mouth.

Zincum, burning, quick stitches, and jerking along the course of the infra-orbital nerve, right side, attended with bluish eyelids; numbness of the tongue; constricted sensation of the throat; worse from the slightest touch and in the evening.

3. Cervico-Occipital Neuralgia.

Its seat is in the region of distribution of the sensory fibres of the upper four spinal nerves, most frequently only on one side, extending, therefore, over the upper part of the nape of the neck and the occiput, over the lateral region of the head, and in front towards the lower jaw. The occipitalis major frequently shows *painful spots*, one about half way between the mastoid process and the upper cervical spinous processes (*occipital point*), and the *parietal point* over the parietal eminence. Of the other nerves implicated such points can rarely be demonstrated.

Compare Acon., Bellad., Calc. carb., Caustic., Ignat., Kalmia lat., Laches., Nux vom., Pulsat., Rhus tox., Spigel., Sulphur.

4. Cervico-Brachial Neuralgia

Extends over the region of distribution of the four lower cervical nerves and a part of the first dorsal nerve, and may affect the back of the neck, the upper, or the lower arm, even the hand and fingers. The *painful points* are numerous, but somewhat indefinite; they may be found: "over the brachial plexus from the axilla outwards; at the lower angle of the scapula; on the posterior surface of the shoulder; on the median at the elbow; at the emergence of the cutaneous medius and lateralis from the fascia of the forearm; on the ulnar above the internal condyle, and at the wrist; on the radial nerve where it winds around the humerus, and above the wrist, on the spinous processes of the four lower cervical, and two or three upper dorsal vertebræ, and at their sides where the posterior branches appear under the skin." (Erb.)

Compare Acon., Arnica, Arsen., China, Ferrum, Graphit., Ignat., Lycop., Phosphor., Rhus tox., Sepia, Staphis, Sulphur, Veratr.

5. Intercostal Neuralgia

Has its seat in the region of distribution of the dorsal nerves, and not unfrequently affects both sides of the chest, but most frequently the left side only between the fifth and ninth intercostal spaces. There is a feeling of tension, as though the patient were tightly bound around the chest, and occasional shooting pains in the direction of the intercostal nerves are occasioned by taking a long breath, by coughing, sneezing, sighing, or certain motions of the body; by pressure of the clothing or a slight touch, which generally is relieved again by hard pressure.

The *painful points* are in the region near the spinous process of the vertebræ, where the dorsal nerves emerge from the spine (vertebral point); in the middle portion of these nerves, where the ramus perforans lateralis emerges beneath the skin (lateral point); in the region close to the sternum, and in the abdomen over the rectus muscle (sternal and anterior point).

Differential Diagnosis.—*Pleurisy* differs by its rubbing sound and fever,

Angina pectoris by its fits of suffocation,

Rheumatism of the muscles of the chest by its more general diffusion over the chest and its aggravation by slightest movement.

Compare Arnica, Arsen., Borax, Bryon., Calc. carb., Carb. veg., Caustic., China, Cimic., Mercur., Rhus tox., Sepia, Spigel., Sulphur.

After *shingles:* Mezer., Secale corn.

6. Lumbo-Abdominal Neuralgia

Has its seat in the region of distribution of the lumbar nerves, and consists of pain in the lumbar region and on the abdomen, which is easily excited by raising a fold of the abdominal skin, or by touching it slightly, and by pressure upon the region near the lumbar vertebræ. Frequently we find associated with it a pain in different places of the crest of the ileum and on the seat; and also pain which extends from the inguinal region to the symphysis pubis and down into the scrotum or into the labia majora, which are referable to the superficial branches of the lumbar nerves.

Its painful points are: "one or several in the lumbar region near the spinal column (lumbar point); one about the middle of the cresta ilii (iliac point); one or several above the symphysis pubis, at the side of the linea alba (abdominal point); not unfrequently one in the scrotum or labium majus; and lastly, and less constantly, one in the inguinal region or in the portio vaginalis uteri, or in the corresponding side of the vault of the vagina." (Erb.)

Compare Argent., Bellad., China, Kalmia lat., Nux vom., Pulsat., Rhus tox., Spigel., Staphis., Sulphur.

7. Mastodynia, Neuralgia of the Mammæ.

Its seat is in the mammary glands, which are supplied chiefly from branches of the intercostal nerves. The breast becomes very painful, often without any visible change in its structure. In some cases, however, small tumors (neuromata) have been observed, which appear to be the starting-points of the neuralgia, and they either disappear soon or remain unaltered for years. The pain radiates sometimes into the axillæ, into the back and down into the hips, and may be attended with vomiting. Lying on the affected side is impossible. *Painful points* may be found

on the nipples or on the sides of the breast, or on the spinous processes of the second, third, fourth, fifth and sixth dorsal vertebræ. Mastodynia seems mostly connected with irregularities of menstruation, at which time it is generally the worst. But also lactation, external injury, anæmia, chlorosis and hysteria are counted among its causes. Its most frequent occurrence seems to be between the ages of sixteen and thirty.

THERAPEUTIC HINTS.—Painfulness of the mammæ *before or during menstruation*, Argent., Calad., Calc. carb., Canthar., Cimicif., Conium, Kali carb., Murex purp., Nitr. ac., Rhus tox., Tabac.

During the *nursing* of the child: Crot. tigl., Ferrum, Phell. aquat., Phosphor., Silic.

8. Neuralgia ischiadica, Sciatica, Ischias postica, Malum Cotunnii.

Its seat is in the n. ischiadicus, though not always in its entire length. Most frequently we find the pain extending from the nates down the posterior part of the thigh to the bend of the knee, down along the fibula to the external ankle, heel and external portion of the foot; the internal border of the foot is exempt; sometimes the pain is felt only in the sole of the foot (neuralgia plantaris), and seldom in the dorsum of the foot and toes. In rare cases both extremities are affected at the same time. The pain generally commences mildly and gradually grows worse; sometimes it is paroxysmal, generally worse towards evening and in the night, sometimes only during the day. Slight touch aggravates or provokes the pain, while a hard pressure sometimes gives relief. With some the pain is ameliorated by moving about constantly, while others cannot bear the slightest motion, so that coughing, sneezing, pressing at stool are almost killing operations to them. Sometimes the pain is attended with a cold sensation in the affected extremity, followed by heat. In other cases we find reflex symptoms of the motory nerves, manifesting themselves as cramps in the calves of the legs and in the soles of the feet. It has even been observed that during violent paroxysms the heel was drawn up towards the buttock of the affected limb.

Painful points are: "a point close to the sacrum, in the immediate vicinity of the posterior superior spine of the ileum; a

point where the sciatic nerve emerges from the pelvis; a point at the lower border of the gluteus, where the posterior cutaneous nerve emerges; a painful line corresponding to the course of the tibial nerve in the popliteal space; a point over the head of the fibula; a point behind the outer ankle-bone and another behind the internal malleolus; several points on the dorsum of the foot, and occasionally points on the posterior surface of the thigh and on the calf of the leg, where the cutaneous branches perforate the fascia." (Erb.)

In regard to its CAUSES we are very much in the dark. Atmospheric influences, however, such as damp, cold weather, seem to be very apt to bring it on. Therefore we find among the exciting causes, getting wet, sleeping on the damp ground or within moist walls, or taking cold in general. Likewise are mentioned direct influences upon the nerves, such as pressure of narrow boots, wounds from blood-letting, carcinoma, aneurisms, pressure of the pregnant uterus, deliveries by the forceps, diseases of the vertebræ and neuroma.

THERAPEUTIC HINTS.—**Arg. nitr.**, periodical pain from hip down to knee, with paralytic weakness and wasting away of the limb; during paroxysm sensation of expansion in limb; worse morning and noon.

Arnica, when caused by overexertion, marching, fracture of limb, confinement, etc., with formication and lame feeling; necessity to change the position of the limbs constantly, because everything upon which he lies seems too hard.

Arsen., the burning pain is attended with anguish and restlessness, and is worse about midnight; brought on by staying in cold, damp cellars; it is somewhat relieved by external warm applications; intermittent fever.

Bellad., feverish; inclined to weep; wants to sleep and cannot sleep; pain worse from touch and motion; from least draught of air; from afternoon till midnight; better from letting limb hang down, and after perspiring; from warmth and when in erect position.

Bryon., better during rest, and worse on motion.

Chamom., pain excruciating; the patient acts as if beside himself; after anger or vexation.

Calc. carb., if caused by working in water; or in case of complication with affections of the spinal bones; the pain starts from

the small of the back, extends down into the limbs and keeps them in constant uneasiness.

Caustic., tearing pain on the outer side of left limb from above down, as if the muscles were pinched; constant desire to move the foot. (Marenzeller.)

Cimicif., causes many reflex pains in different parts, dependent upon ovarian or uterine irritation.

Coffea, tearing, stitching pain, in irregular spells, worse in the night, with restlessness and sleeplessness.

Coloc., tearing downward, posteriorly, from hip to thigh, leg and foot, left or right side, during the day, not at night; worse from motion and pressure; must limp when walking, and be careful not to press the limb when sitting; feels best when lying still. During paroxysm sweat and thirst. Eyelids burn even after sound sleep; after indignation.

Ferrum, remitting pains; worse in the night, driving out of bed; although at first scarcely able to stand upon the affected limb, by continued motion and walking about, the pain gradually becomes milder; pain in the left shoulder; the face is pale, emaciated, but flushes easily.

Gnaphal., intense pain along the sciatic nerve, which is continued to its larger ramifications; feeling of numbness, occasionally taking the place of the sciatic pains, and then exercise on foot is excessively fatiguing.

Hepar, the pain is worse from motion, touch, and exposure to air; better from being wrapped up and keeping quiet.

Ignat., throbbing pain in the hip, as though the joint would burst; intermittent, at first every other day—later, daily; attended with chilliness and thirst, followed by heat without thirst; disappearing during the summer season, and reappearing in the winter.

Iris vers., burning and sudden shooting down the limb, causing lameness; worse from moderate, not altered by violent motion.

Kali bichr., pain relieved by walking and flexing the leg; worse from standing, sitting or lying in bed.

Kali hydr., nightly tearing in right thigh and knee, worse lying on affected side; abuse of mercury; syphilitic taint.

Laches., pain constantly changing locality, now in the head, now in the teeth, now in the sciatic nerve, attended with nervousness, palpitation of the heart; burning like fire in the hypogastrium, lumbar region, and behind the sternum; flushes of heat; suppressed menses; constipation.

Ledum, laming pain in the hip-joint, worse in bed, when getting warm; the affected limb is cooler than the remainder of the body; general coldness and chilliness. The pain frequently commences below and ascends. Great tenderness of the soles of the feet.

Lycop., pain in the hip, stiffness and weakness, and formication of the affected limb; cold feet; incarcerated flatulence and constipation; urine high colored, turbid, or depositing a red, sandy sediment.

Menyanth., the pain is of a crampy nature, and when sitting, the limbs are jerked upwards spasmodically.

Mercur., drawing, tearing pain, worse at night in bed; restlessness; great inclination to sweat, without any relief; syphilitic taint.

Mezer., drawing pain through the affected limb, with sensation of internal heat in the limb by external coolness of the skin; worse from touch and motion, in evening and at night; better in the open air.

Natr. mur., chronic cases with contraction of hamstrings; intermittent; abuse of quinine.

Nux vom., the pain is drawing, tearing, from below upwards, better from hot water application; constipation; during stool, great pain along the affected limb down into the foot; sedentary life; alcoholic drinks; previous use of all sorts of liniments, etc.

Plumbum, drawing, pressive pains in the sciatic nerve in the posterior part of the thigh, down to the knee, with difficult walking and great exhaustion after walking; tubercular diathesis, with dry, hacking cough.

Phytol., neuralgic pain on the outer side of the thigh; right side; pressing and shooting, drawing and aching; worse from motion and pressure, and worse in the night; syphilitic taint.

Pulsat., pain getting worse towards evening and in the night, with inclination to constantly change position; worse in warm room; better in open air.

Rhus tox., the pain is attended with numbness, formication, paralytic stiffness of the affected limb; it is worse during rest, and when commencing to move; better from dry heat; it is mostly brought on by exposure to wet, by straining and lifting.

Ruta, pain as if in the bones, worse in rest, must constantly be moving about during the paroxysm; hamstrings feel shortened; after injuries, contusions, etc.

Sepia, during pregnancy, pain in paroxysms from three to five o'clock A.M., with considerable swelling of the veins of the affected limb; also in chronic cases, when the pain localizes itself in the heel of the affected limb; better during rest.

Stilling., left side; syphilitic and gonorrhœal origin.

Sulphur, in chronic cases, when all other remedies fail; after the suppression of tetters.

Tellur., worse when lying on the affected side.

Valer., the pain is unendurable while standing, with a feeling as if the thigh would break off.

Zinc. ox., pain in small of back at night, on turning in bed; feeling of lameness extending to hips; bruised pain especially in left lower limb, or in hip and knee; painful tension of muscles when moving; pulsation and buzzing in ears. (F. W. Payne.)

9. Crural Neuralgia, Ischias Antica.

Its seat is the crural nerve; the pain is felt from the inner and lower portion of the thigh, down to the inner portion of the knee, the inner ankle, the inner portion of the foot, and the big and second toe.

As CAUSES have been named: uterine swellings, especially of a cancerous nature; inflammation of the hip-joints and crural hernia.

THERAPEUTIC HINTS.—Coffea, Phytol., Staphis.

Compare Neuralgia and Sciatica.

Anæsthesia.

Anæsthesia takes place from two causes:

1. Either from an *inability of the sensory nerves to convey* the external impressions to the central organs; or—

2. From an *inability of the central organs to perceive* external impressions.

The first is the case, for example, where a nerve has become cut through. Any irritation below that cut, towards the periphery, is not perceived any more by the central organs; that part may be pinched, burnt, etc., but it is not felt. The latter may have its source in a *disease of the spine* or *of the brain*. In both cases the want of feeling is chiefly associated with paralysis of the corresponding parts.

The degree of such anæsthesia varies from a mere numbness to torpor and deadness of the part. Its influence upon the vegetative functions in the affected parts shows itself as: decrease in natural warmth; slowness of capillary circulation; want of perspiration; subcutaneous œdema; livid color of the skin; brittleness of the nails; ecchymosis, and blisters filled with bloody serum, especially on the toes and fingers.

Of the different forms of this affection I shall mention only the following:

Anæsthesia of the Trigeminus.

According to the extent to which this nerve has lost its ability to convey external impressions to the sensorium, we find a want of feeling in the corresponding portions of the skin and mucous membranes. The patient does not feel any external irritation in these parts; when eating, knows not whether he holds anything in the affected side of the mouth or not; the saliva runs out of the mouth without his knowledge; and the glass held on his lips seems to him broken off where it touches the affected side. In addition, there is likewise found weakness of sight, loss of smell and taste.

The reflex motions of the muscles of the face are gone, the eyelids do not shut when the conjunctiva is touched, and the patient does not sneeze when the mucous membrane of his nose is irritated. Also the voluntary muscular motions of the affected side are more torpid, and the pupil is contracted and immovable.

The seat of the affection is, according to Romberg's observations, more towards the periphery of the fifth pair of nerves, when the anæsthesia is limited to some of its fibres.

When, however, the anæsthesia affects not only the external surface of the face, but also the corresponding cavity of the eye, then the cause lies in one of the main *branches* of the trigeminus, either before or after its exit from the skull. When the anæsthesia extends over the whole ramification of the trigeminus, the cause of the affection then lies in the *ganglion Gasseri*, or immediately below it in the nerve.

When, however, the affection is combined with disturbances of other cranial nerves, its seat lies in the base of the brain. A central anæsthesia affects crosswise, and involves at the same time other sensory and motory nerves of the head and body.

CENTRAL CAUSES are: apoplexy, softening, and tumors of the brain.

PERIPHERIC CAUSES: inflammation; softening; hardening and atrophy of the nerve and of the ganglion Gasseri. Likewise the severing of the nerve or of one of its branches by surgical operations, or other external injuries, blows, wounds, etc.; or pressure upon it in consequence of tumors or foreign bodies, like musket balls, or fracture of the petrous portion of the parietal bone.

These causes show at once all that might be said about its prognosis and curability.

Just as the sensory nerves may be morbidly affected in a two-fold manner, either by an *increase* or a *loss* of their sensibility, so also are the morbid affections of the *motory nerves* of two kinds, either *spasm, cramp, hyperkinesis;* or *paralysis, akinesis*—that is, increased or lost motility.

1. Spasm, Convulsion, Cramp, Hyperkinesis.

Spasms manifest themselves under different forms: 1. Either as short, slight jerks of certain muscles; or, 2. as violent, frequently-repeated contractions of the same or different sets of muscles (clonic spasms); or, 3. as hasty motions which, although regular, are deficient in purpose and rhythm or are automatically repeated; or, 4. as irregular, misdirected motions (in-coordinated spasms); or, 5. as trembling or tremor; or, 6. as a continuous rigidity of one or more sets of muscles, even of all muscles (tonic spasms); and, 7. as a permanent contraction of certain muscles (contractures). Their violence and extent are very different, and do not always correspond to the importance of their cause. Grave disorders in the central organs may be attended with but slight spasms; whilst, *vice versa*, a slight reflex irritation may cause the most violent convulsions.

Their CAUSES are various: I may mention as *predisposing ones*, the age of childhood—the younger the child, the greater the predisposition. Almost any acute disease may be attended by spasms at this age, and frequently is preceded by them. Even in chills and fever, little children have spasms instead of a chill. As special forms of spasms in this early age I may mention *eclampsia* and *trismus*. In later years, up to the time of puberty, we find a predominating disposition to the different forms of *chorea, stammering* and *squinting*, and likewise the beginning of *epilepsy*.

From the time of puberty to middle age we find *hysteria, epilepsy, eclampsia* and *tetanus.* In still later years we find *writing spasm,* and *tremor.* The female sex seems to be more disposed to spasms than the male.

As Exciting Causes we may mention—

1. *Mental emotions:* fear, fright, anger, terror. Even the sight of convulsions has caused them in others. Epileptic fits have become endemic in this way among the pupils of a whole asylum.

2. *Diseases in the central organs* and their *membranes,* like apoplexy, softening, encephalitis, myelitis, tumors, tubercles, inflammation of the cerebral and spinal membranes, and morbid processes in the bones which encase the central organs.

3. *Peripheric irritations of the nervous system,* by strong light, tickling; also by wounds, blows and bruises of some organs, like the testicles or the uterus, or by irritation of large surfaces, like the mucous membranes—for example, the intestinal canal by indigestible food or worms, or the external skin by sudden taking cold, etc.

4. *Various conditions of the blood,* such as (according to Marshall Hall) great loss of blood or stagnation of blood within the brain; so, also, qualitative changes of the blood in exanthematic fevers, in pyæmia, uræmia and cholæmia.

5. *Certain poisons:* alcohol, narcotics, strychnine, secale, lead and mercury.

The Prognosis of spasms depends entirely upon their causes. When they appear in consequence of organic lesions in the central organs, they are of a much graver nature than when in consequence of a mere peripheric irritation.

Spasms which appear during the beginning or during the course of other diseases, like exanthematic fevers, are a sign that the disease, with which they are combined, is of a violent character, but are not quite so bad a sign, when they occur in children as in grown persons. Spasms from blood-poisoning in uræmia and cholæmia are always a bad prognostic sign.

I shall now speak of the different forms of—

SPASMODIC DISEASES.

1. Spasmus Facialis, Mimic Spasm of the Face.

It affects those muscles of the face which are supplied by the seventh pair of nerves, either on one or both sides.

In its *clonic* form it causes the most awkward appearance of the face; whilst one side looks perfectly quiet and natural, the affected side is continually in motion, cutting all sorts of capers and jerks. The will has not the slightest influence over these distortions. They come on unprovoked, and may last a shorter or longer time. In some cases they are brought on by a usual effort to talk, chew, etc., disturbing these natural muscular actions greatly.

The *tonic* spasm is different. The face appears as though, during a distortion, it had suddenly become rigid, stiffened, so that it does not partake of the motions of the sound side, which manifests itself especially in laughing or whistling. This rigidity might give occasion to confound it with paralysis of the face. However, chin, lips and nose are drawn towards the affected side; the corner of the mouth of the affected side is drawn downwards, whilst the eyebrow is drawn upwards. The eyelids of the affected side cannot be perfectly closed, and the mouth not perfectly opened, thus interfering with talking and chewing. The muscles of the affected side are hard to the touch, and the patient has a feeling as if they were stretched.

As the most frequent CAUSE of this complaint, may be mentioned: *suddenly taking cold* by exposure to a sharp, piercing wind, rain or snow driven into the face. Likewise external injuries, especially bruises of the bones of the face and skull, decayed teeth, etc. Violent mental emotions, like anger or terror, and hysteric conditions have also been observed as causes of this complaint.

THERAPEUTIC HINTS.—When caused by *exposure to cold*, compare Bellad., Hyosc., Mercur.

When caused by *external injuries*, Arnica, Hyper.

When caused by *diseases of the bones, decayed teeth*, Hepar, Mercur., Silic.

When caused by *anger*, Nux vom.

When caused by *fright* and *terror*, Hyosc., Ignat., Opium.

Constant winking of the eyelids, Anac., Bellad., Stramon.

Risus sardonicus, compare Acon., Anac., Alum., Asaf., Bellad., Bovista, Calc. carb., Cicuta, Conium, Crocus, Cuprum, Hyosc., Natr. mur., Nux mosch., Phosphor., Platina, Ran. scel., Sepia, Stramon., Veratr., Zincum.

2. Mogigraphia, Graphospasmus, Writers' Cramp, Pianists' Cramp, etc.

It commences first as a mere tired feeling of the hand, after long-continued writing. By and by this feeling increases, and the writer has to make pauses frequently in order to rest the hand; lastly, it is quite impossible to hold the pen and to write, because, 1st, either a spasm of the extensors draws the fingers asunder, or, 2d, a spasm of the flexors of the first three fingers, or of only one of them, makes it impossible to hold the pen. Such spasms may be clonic or tonic. Sometimes the thumb and fingers are only slightly drawn together, and writing might be possible, if it were not for the strong trembling which attacks the hand and the whole arm up to the shoulder, as soon as writing is attempted.

If writing be attempted with the other hand, it is not long before the same spasms attack it also.

It is quite remarkable that all other manual acts can be easily executed, although in some cases cramps and tremors attend them likewise.

Similar spasmodic affections have been observed also in the habitual performances of shoemaking, milking, playing musical instruments, setting type, sewing, etc. Its *causes* seem to be overexertion in writing, or disturbance in the co-ordinating apparatus. It is increased by anxiety, and constant thinking of it.

The most important remedies are Bellad., Caustic., **Gelsem.**, Ignat., Nux vom., Ruta, Secale, Silic., **Stannum**, Staphis., Zincum. Light and large penholders ought to be used.

Chorea, St. Vitus' Dance

Is defined now as a neurosis, the seat of which is supposed to be at times in the brain alone, at times in the entire nervous system; it is characterized by incessant incoördinate twitchings and jerkings of groups of muscles, either spontaneous in origin or ex-

cited by voluntary impulse, exclusively occurring in the waking state and accompanied by more or less developed psychical disturbance. (Von Ziemssen.) Dr. J. Lawrence Newton recognizes five forms: the true cerebral, the spinal, the uterine, the intestinal and rheumatic form. Chorea is prominently an affection of the period of bodily development, but is seen also: during pregnancy; in consequence of disturbances of menstruation and sanguification (chlorosis, anæmia), and in frequent connection with articular rheumatism. As EXCITING CAUSES have frequently been observed: *mental emotions*, such as fright, or fear, etc.

SYMPTOMS.—1. *Involuntary motions* sometimes extend to all the muscles which obey the will; sometimes they are confined to certain groups of them, oftenest to the upper half of the body; sometimes only one side is agitated, and in exceptional cases we find a crosswise agitation—an arm of the one, and the leg of the other side. Again, involuntary motions sometimes commence in a few muscles only, gradually extending over the whole side, and finally to the muscles of the whole body. We then find the whole body in constant agitation, jerking, twisting, swinging, a ludicrous and sometimes pitiful sight. There is no interruption of these irregular motions, except during sleep, which is generally restless and unrefreshing; and even then they recur, although in a less degree, when the patient dreams. On waking the same tumultuous scene commences again.

2. The *regular voluntary movements* of the body are thus greatly interfered with, and at last cannot be executed at all. Dressing, writing and playing instruments become impossible, talking difficult and exertions to overcome the difficulty have always had the contrary effect—increase of spasmodic action.

3. The *reflex motions*, however, are not disturbed. If the patient itches somewhere, he can scratch himself without any trouble; so can he sneeze, cough and evacuate bladder and bowels, etc.

4. *All other involuntary motions of the body* are perfectly free in their action; there is no interference in breathing, in the pulsations of the heart, nor in the act of swallowing, and the peristaltic motions of the intestine are normal.

5. The *sensibility* is in most cases normal.

6. The *mental functions*, however, suffer considerably from a long duration of the disease. The patient at length shows a loss of memory, weakness of mental capacity, and in some severe cases

even imbecility of mind; the disposition becomes fretful, irritable and peevish.

Chorea is of a chronic nature and its duration extremely variable. It is apt to recur, and relapses are especially frequent after mental excitement. Under judicial homœopathic treatment it is in most cases easily cured.

THERAPEUTIC HINTS.—**Agar.**, the spasmodic motions range from simple, involuntary motions and jerks of different muscles to a dancing-like turning of the whole body; or attack crosswise, an upper right and a lower left extremity, or *vice versa;* frequent nictitation of the eyelids; redness of the inner canthus of the eyes; flow of tears from the eyes; sensitiveness of the lumbar vertebræ; ravenous appetite, but difficult swallowing; cervical glands swollen; worse during the approach of a thunder-storm.

Ast. rub., trembling jactitation of arms and legs; unable to feed herself or to walk; frequent, clear, profuse urine; after fright and mental depression.

Bellad., throwing the body forward and backward in lying, a kind of constant changing from emprosthotonus to opisthotonus; boring the head into the cushion; grating of the teeth; sore throat; numbness in the fingers; soreness of the last lumbar and the first dorsal vertebræ; after mental excitement; fright.

Calc. carb., sometimes only one-sided involuntary motions; sometimes amounting to falling down; exceedingly headstrong; period of second teething; worm symptoms; scrofulous habit; onanism.

Cauloph., in young girls with menstrual irregularities.

Caustic., distortion, twisting and jerking of the limbs, even in the night, preventing sleep; paralysis of the tongue and the right side of the body; after suppressed eruption on head.

Wm. Gross mentions a peculiar case of a young girl, who had the following paroxysms: the child would lay down on her stomach, and inserting one of her knees into the hollow of the other knee, and drawing her feet upwards upon the buttocks, her body would commence jerking forward and backward, simulating the movements exercised during coitus; at the same time the muscles of her face became contorted, like risus sardonicus. After the attack the child was exhausted, but during the intervals she showed no particular symptoms; the spells were worst in the morning.

Cimicif., chiefly on the left side only; worse during the menstrual period; after suppression of the menses; from rheumatic irritation; frequent alternation of heat and cold in different parts of the body.

Cina, the distortions often commence with a shriek, extend to the tongue, œsophagus and larynx, and continue even through the night; they are attended with frontal headache; enlarged pupils; dark rings around the eyes; itching of the nose; pale, yellowish, earthy face; ravenous appetite; pain around the umbilicus; hard stools; turbid urine; emaciation; all pointing to irritation of the intestines by worms.

Coccul., involuntary motions with the *right arm* and *right leg;* they cease during sleep; face puffed, somewhat bluish; hands look as if frozen; paralytic symptoms.

Crocus, jerking in the muscles; spasmodic contractions of single sets of muscles; jumping, dancing, laughing, whistling; wants to kiss everybody; congestion of the head with bleeding of the nose; suppressed menses.

Cuprum, commences in one arm and spreads over the whole body, causing the most terrible contortions and awkward movements; inability to speak, or only imperfectly; after fright.

Hyosc., throwing about of the arms; misses what he reaches for; constant falling of the head from side to side; tottering gait; very talkative, or loss of speech; laughs at everything that is told him; smiling, silly expression of countenance; after typhus.

Ignat., especially when caused by fright or other mental excitement; worse after eating; better when lying on the back.

Lauroc., she tears her clothing; strikes at everything; spasmodic deglutition; indistinct articulation; she gets angry because she cannot be understood; idiotic expression of the face; cold, clammy feet up to the knees; she can neither stand nor sit, nor lie down, on account of the incessant motion; wasting away; after fright.

Lil. tigr., convulsive contractions of almost all the muscles of the body, and a feeling as if she would be crazy if she did not hold tightly upon herself.

Mygale, constant jerking of head to the right side, occasionally drops his head suddenly on his shoulder, sometimes he twists his head around to the right shoulder; twitching of the muscles of back and arms; pain in knees when walking; in attempting to control these involuntary motions, he loses his breath, until he

takes a deep inspiration. Twitching of muscles of face and upper extremities; convulsive movements of the shoulders; lower extremities in constant motion; drags her legs when walking; mouth and eyes open and shut in rapid succession. (Howard.)

Natr. mur., chronic cases after fright or suppression of eruptions on the face; worse during full moon; paroxysms of jumping high up without taking notice of the things around him, thus hurting himself sometimes considerably; or mere jerkings of the right side and of the head.

Nux vom., when attended with a feeling of numbness in the affected parts; also after much drugging.

Opium, twitching and trembling of head and arms; throws limbs or stretches arms at right angles to body; after fright.

Phosphor., he walks like one paralytic, without noticing it himself; twitching of the limbs; great exhaustion; after Calc. carb.; during second dentition; in general, during the period in which the body is growing.

Secale, the morbid contractions usually commence in some muscles of the face and spread thence over the whole body, and increase even to dancing and jumping motions.

Sepia, convulsive motions of the head and limbs; when talking (which is only a stammering), jerking of the muscles of the face; general muscular agitation; desire to constantly change position and place; ringworm-like eruptions on the skin every spring.

Sticta, she cannot keep her feet to the ground; they jump and dance around in spite of her, unless held fast; when lying down, her limbs feel as though they were floating in the air as light as feathers.

Stramon., the convulsive motions are often crosswise, or violent all over; preceded by formication in the limbs and a melancholy mood; worse during the equinoxes; inclination to pray; loss of memory; stammering; loss of speech; putting the hands to the genitals.

Sulphur, in chronic cases; after suppressed eruptions; weak, faint, hungry spells about 10 A.M.

Tarant., trembling of the body; all the limbs are agitated; is in constant motion; can run better than walk; feels best in bed. Spasms subside on hearing the notes of a hornpipe; music lessens the symptoms.

Ver. vir., most violent distortions of the body, universal, unaffected by sleep; lips embossed with foam; waked up by a con-

tinual champing of the teeth; inability to swallow; intense sexual excitement.

Viscum alb., common mistletoe, is a popular remedy in England.

Zincum, especially in those cases in which the general health suffers much from the disease, with great depression of spirits; worse after drinking wine.

Hysteria.

This hydra-headed complaint must be classed among the *neuroses*, in which at times part or the whole nervous system participates, without the presence of any apparent anatomical basis. Its most constant feature consists of an *abnormal irritability*, with neuralgic pains, and hallucinations in the sensory, and convulsions in the motor sphere; or the reverse, anæsthesia and paralysis. Although unmistakably a connection exists in many cases between the female genital organs and this complaint, it is nevertheless an erroneous assumption that hysteria is a disease exclusively peculiar to the female sex. However, the female sex does contribute the largest number of patients, especially during the ages between 10 and 30 years; after the climacteric period its occurrence is rare.

As important ETIOLOGICAL data must be mentioned: *a peculiar psychical constitution*, liable to changing emotions and little strength of will; *disorders of the female genital organs*, menstrual disturbances, non-gratification of the sexual appetite, or over-irritation; *persistent depressing mental emotions*, such as the sense of failure in one of the objects of life (childless women and old maids), love-sickness and jealousy, injured vanity and wounded pride, self-reproach because of secret sins, grief and anxiety, etc.; educational influences, such as too great indulgence, or too great demands upon the mental capacity, by overburdening with lessons, and overstimulating the ambition.

The SYMPTOMS of hysteria are exceedingly various and variable. We find in the sense of *sight*, photophobia, or dislike to particular colors, such as the red, or subjective light-phenomena, such as simple flashes, sparks, or more complicated figures, phantasms, and even visionary hallucinations; in the sense of *hearing*, oversensitiveness, or ringing, blowing, roaring, or hearing of voices; in the senses of *smell* and *taste*, various kinds of idiosyncrasies, such as aversions to different sorts of scent or taste which

are not unpleasant to others, or a desire to smell asafœtida, or to devour chalk, coal and other such things; in other *sentient nerves*, all kinds of pain and abnormal sensations, such as headache, tickling cough and pain in the larynx, soreness of the mouth and tongue, neuralgia of the mammary glands, heavy dull pain and oppression in the chest and about the heart, cardialgias and gone feeling in pit of stomach, tightness in the epigastrium, pains in the hypochondria, in the bowels, in the ovaries, in the womb, in the external genitals, in the bladder and urethra, in the coccygeal region, in the back—spinal irritation, and in the extremities.

Or we find *anæsthesia* of the sense of touch, or in some of the limbs, or in a portion of them, or on one-half of the body, especially the left, or, but rarely, over the whole surface of the body. With the loss of cutaneous sensibility, a similar loss of sensibility in the muscles, as well as in the hands and joints may be united, and it may extend over the mucous membranes of eyes, nose, mouth, respiratory organs, genital organs and urinary passages. In the higher senses, amblyopia, amaurosis and deafness have been observed.

We find also *spasms* of various descriptions, such as globus hystericus in the throat, or the rising of a ball from the region of the symphysis toward the stomach; spasmodic breathing, singultus, yawning, convulsive laughing or crying, or screaming; spasmodic retention of urine, spasm of the constrictor ani; local spasms in all possible sections of the muscular system of the head, trunk and extremities, even general convulsions, or similar to chorea and epilepsy. Or we find *paralytic* conditions of the pharynx and œsophagus (hindering deglutition), of the bowels (preventing a spontaneous expulsion of gases and feces), of the vocal cords (producing aphonia), of the bladder (causing retention of urine), of the extremities, either in the hemiplegic or paraplegic form, or crosswise, or of only one extremity, or of all four. In the palsied extremities a *permanent contraction* not unfrequently develops itself. Both paralysis and contraction may last for years and may be cured by all kinds of moral influences, or resist them all.

We also find changes in the *circulation*, powerful palpitation of the heart, or weakness of its action, pale and cold extremities, red face and hot head, with perspiration; also unilateral sweating—all changing with normal conditions.

In some cases *hæmorrhages* have been observed from the nose,

throat, stomach and lungs, and in rare cases from different portions of the skin (stigmatization), all mostly of a vicarious nature; *salivation* or its opposite, *abnormal dryness of the mouth*, occurs sometimes after hysteric fits; the hysterical vomiting of large quantities of fluid seems to be in connection with a suppression or lessening of the renal secretion, and therefore likewise of a vicarious nature. The urine is often copious, clear, of low specific gravity (urina spastica) and frequently voided, especially after spasmodic attacks; at other times its secretion is diminished and coupled with spasmodic closure of the neck of the bladder, so that the small quantity which exists must be removed by the catheter. Leucorrhœa has often been found to increase after hysterical attacks.

The *hysterical attacks* themselves vary greatly in their forms, according as more or less of the above detailed symptoms combine in greater or less intensity. One form has been styled the *hystero-epileptic*, on account of the similarity of its convulsions to epilepsy, another the *cataleptic*, another the *hysterical trance*, to which some have added somnambulism, sleep-walking, magnetic sleep, hypnotism and ecstacy—an exhibition of elasticity of the term "hysteria" that leaves nothing to wish for and is truly marvelous.

THERAPEUTIC HINTS.—Being a functional disorder, hysteria is certainly amenable to treatment. Quite important here is the personal, psychic and moral influence of the physician upon his patient. The remedial agents are necessarily very numerous in a disease of so varied and variable a character. I shall, however, confine my remarks to but few characteristic hints of the several remedies, and refer for fuller descriptions to the chapters on spinal irritation, neuralgia, spasms, paralysis and uterine disorders.

Acon., fear to go into crowds; fear of death and predicting the hour of her death.

Agar., crosswise complaints.

Anac., forgetful, and irresistible desire to curse and swear.

Arsen., spasmodic dyspnœa, with fear of death.

Asaf., dryness of œsophagus; globus hystericus.

Aurum, melancholy; longing for death; palpitation; alternate laughing and crying.

Bellad., congestions to head; spasms; hallucinations.

Calc. carb., fears she will lose her reason; coldness in and on head; cold, damp feet; palpitation after eating; chorea-like and epileptiform spasms.

Caustic., paresis of upper eyelids.

Chamom., exceedingly irritable, peevish and impatient.

Coccul., tickling cough; choking in throat; oppression of chest; paralysis of tongue or pharynx.

Conium, old maids; non-gratification of the sexual appetite; globus hystericus.

Cuprum, spasmodic affections.

Gelsem., paralytic symptoms in throat, in limbs; spasms from reflex irritation; cataleptic immobility, with dilated pupils, closed eyes, but consciousness.

Hyosc., illusions; silly expressions and silly actions; jealousy; disappointed love.

Ignat., choking in throat and constriction of chest, with sighing-breathing; tickling cough which may be suppressed by an effort of will; feeling of goneness and gnawing in pit of stomach; grief.

Iodium, rapid failing of strength and emaciation in spite of eating freely.

Laches., sensation of a lump in throat which descends on swallowing, but returns at once; suffocating sensation, with constant efforts to remove all external pressure from throat and chest; feels worse on waking; jealousy.

Lil. tigr., hurried manner without accomplishing anything; weak, nervous; uterine troubles; palpitations.

Lycop., full and satiated; rumbling in upper left side of abdomen; sandy or pale urine.

Magn. mur., fainting fits at dinner, nausea and trembling, relieved by eructations; spasmodic complaints.

Merc. sol., profuse saliva; perspiration without relief.

Moschus, anguish and fear of death; swooning; tetanic spasms.

Natr. mur., desire for salt; somnambulic states; pain in urethra after micturition.

Nitr. ac., longing for fat, herring, chalk, lime, earth; twitchings in various parts; trembling; great weakness.

Nux mosch., inclined to laughter; drowsy; great dryness of mouth; leucorrhœa in place of menses.

Nux vom., pressure and pain in pit of stomach, belching; longing for chalk; tendency to faint; chronic spasms, with numbness.

Pallad., feels best in company and wants to be flattered; easily wounded pride.

Phosphor., alternation of laughing and weeping; sense of weakness in abdomen; dry, hard stools; increased sexual desire.

Platina, pride, haughtiness; illusions; spasms alternating with catalepsy, or with dyspnœa; sexual erythism; physical symptoms alternate with mental symptoms.

Pulsat., mild, tearful, yielding, timid; peevish; changeable; loss of smell and taste; no appetite and no thirst; increased mucous secretion from different orifices.

Sabina, irritable in temper; abortion in third month.

Sepia, sensation of something twisting about stomach and rising to throat, with stiffness of tongue, speechlessness, and rigidity all over; spasms; fainting with profuse sweat; undisturbed consciousness and inability to move.

Stannum, feels fainty from going *down* stairs; cannot sit down slowly, drops down; rises without difficulty.

Staphis., great indignation on least occasion.

Stramon., hallucinations; desire for light; great sensitiveness; weeping and laughing alternately; sexual excitement.

Sulphur, flushes of heat; heat on top of head; cold feet; sensation of hunger in forenoon.

Tarant., choreic restlessness of limbs; music has a soothing influence.

Valer., ecstacy; overexcitable, changeable disposition and ideas; jerking, twitching, trembling.

Veratr. alb., cold sweat on forehead and elbows.

Zincum, fidgetiness of feet and lower extremities.

Trismus and Tetanus

Are characterized as tonic contractions of the voluntary muscles, alternating with convulsive concussions. It is seldom that the disease is at once fully developed. Several days before its outbreak, chilly sensations are occasionally felt, even shaking chills, and aura-like pains from the injured part of the body. There are at first drawing pains in the neck and stiffness in the nape of the neck, with some difficulty of swallowing. These symptoms increase; the head becomes immovable and drawn backwards, the masseter muscles grow rigid, the lower jaw is set, and deglutition still more difficult, even impossible. This state of things is called *trismus* or *lockjaw*. But frequently the tonic spasm gradually extends over all the dorsal muscles, down to the sac-

rum, and over the muscles of the chest and abdomen, so that the whole body becomes as hard and rigid as a piece of wood. The muscles of the extremities are not quite so severely affected, and sometimes not all. The muscles of the face are likewise less severely involved; but still they participate more or less. There is a peculiar tension and painful expression in them. The eyeballs are rigidly drawn towards the inner canthus, and during the convulsive exacerbations the forehead becomes corrugated; the eyebrows frown, the eyes stare, the lips are drawn asunder, showing the teeth; the tongue is thrust between the teeth, and frequently severely bitten. There is often risus sardonicus. *This is tetanus.*

The general tonic spasm of the voluntary muscles, however, has its remissions, that is, the rigidity of the muscles yields occasionally to a more relaxed state, until either without any external cause, or by some external influence *under a sudden general convulsive concussion*, the highest degree of rigidity again sets in. Sometimes these recurring concussive jerks are so violent that the patient is thrown backwards and forwards, while in other cases they resemble only electric shocks. In this way the disease progresses, alternating with rigidity, partial relaxation, and convulsive concussions. The contractions are so violent that in most of the cases single bundles of muscular fibres are torn and extravasation of blood takes place. The following forms of these spasms have been recognized: *Opisthotonus*, a bending of the body backwards, even to such a degree that the patient lies upon his heels and the back of his head; *emprosthotonus*, a bending of the body forwards; *pleurothotonus*, a bending of the body sideways; and *orthotonus*, being stretched out straight. The most frequent form is opisthotonus; all other forms are quite exceptional.

As long as the spasm prevails, the *will* has not the slightest influence over the muscles. On the contrary, an effort to check the spasm only increases the rigidity of the muscles, and likewise do all reflex irritations, so that, as is well known, even the slightest touch, movement of the bed, or even a draught of air, is sufficient to instantly cause *the most violent convulsive concussions.*

The respiratory action is, of course, greatly interfered with, inasmuch as all the respiratory muscles are involved in the affection; where the remissions are of but short duration, we find dyspnœa in a high degree, and sweat, sometimes even danger of suffocation.

The *pulse* during the remissions usually is normal, or only slightly accelerated; but during the paroxysms it may reach 180, and the heart may suddenly cease acting during the attack. The *temperature* rises in many cases to 112.73° F., while in others it does not increase, or only slightly towards evening.

There is great pain in the muscles during their contractions, and especially is there a painful sense of pressure in the pit of the stomach, with extreme anxiety and excitement.

There is usually distressing thirst, and in some cases actual hunger, neither of which can be satisfied; the bowels, as a rule, are constipated, and micturition is often impossible; the urine has, in some cases, been found to contain albumen, and in others sugar.

The skin is generally hot and covered with perspiration, as in violent muscular exertions, and is followed by sudamina.

The functions of the brain seem entirely unmolested; the patient has to suffer all these tortures in full consciousness.

Sleep is entirely absent, and if the patient loses himself for a moment in consequence of exhaustion, he is at once roused again by violent concussions. This is the character of all kinds of tetanus.

Trismus or **Tetanus neonatorum** presents, on the whole, the same features; commencing at first with stiffness of the jaws and consequent inability to suck and swallow, the tonic spasms extend gradually downward and also implicate the extremities. Signs of collapse soon appear, and recovery is still more uncommon than in cases of adults.

The exciting CAUSES of tetanus are:

1. *External injuries of peripheric nerves* of the extremities, face, and genitals; likewise parturition and abortus. In new-born children, inflammation of the navel.
2. *Rheumatism* in consequence of *taking cold.*
3. *Lesions of inner organs:* injuries of the uterus, pleuritis and hepatization of the lung.
4. *Poisoning by strychnine* or *brucine.*

An *anatomical basis* of this affection is not known.

THERAPEUTIC HINTS.—Acon., trismus and tetanus; contorted eyes; face changing color, now red, now pale again.

Angust., opisthotonus from external injury; tetanic pains from injured foot up to back and neck; jaws stiff; two weeks after a needle had been run in foot.

Arnica, after bruises; hot head, cool body; longing for alcoholic drinks; internal chilliness, with external heat.

Bellad., at the commencement, when there is: restlessness; sudden jerks and shrieks during sleep; twitching of the muscles of the face and limbs; squinting; inability to swallow; later: convulsive motions; spasmodic respiration; dilated pupils; staring, open eyes. Wound healed but left a dark, tender spot; foot and leg swollen.

Calc. carb., inflamed umbilicus of infants.

Camphora, antidote to strychnine.

Cicuta, suddenly becoming stiff and immovable; tetanic stiffness of the whole body; opisthotonus; face puffed and bluish, or deadly pale and cold; eyes fixed, staring at one point; foam at the mouth; spasm of the chest, afterwards trembling; cannot recollect; the spasms are renewed from slightest touch, even from opening the door, and from loud talking.

Hyper., after running pins in right foot, pain runs up the limb through spine to neck and face; muscles of neck and jaw become rigid, and also the muscles of chest and abdomen. (W. F. Hocking.) Piercing wounds from pointed instruments should always be treated with Hyper. to prevent any untoward symptoms.

Laches., peculiar tetanic look, half closed eyes and stiffness of neck; partial lockjaw; rigidity and pain in muscles of back. After cutting off two outer phalanges of third right toe, by being run over by a carriage wheel; soft parts of toe looked gangrenous nine days after accident. (M. L. Sircar.)

One week after frost-bitten toe which had ulcerated, rigors, shooting pains in back, opisthotonus and trismus; remission midnight till noon; after midnight profuse sweat and agitated sleep; throat sensitive to contact; swallowing fearful. (I. Heber Smith.)

Lycop., drawing of the head towards the right side, with stiffness of the neck, face and jaw; dizziness; heaviness in the head; weak eyes; dry and stuffed-up nose; dry, difficult stool; restless sleep; full of anxious dreams; much depressed in spirits.

Moschus, stiffness of the body, with full consciousness; spasms in the abdominal muscles.

Nux vom., intermitting fits of spasms; disturbed respiration; consciousness not disturbed; renewal of spasms from slightest reflex-irritation.

Phytol., has caused the following symptoms: extremities stiff; hands firmly shut; feet extended and toes flexed; pupils contracted; teeth clenched; lips everted and firm; general muscular rigidity, opisthotonus; respiration difficult and oppressed; convulsive action of the muscles of the face and neck, followed by partial relaxation, which again was succeeded by the same tetanic condition.

Platina, opisthotonus alternating with spasms, with full consciousness; profuse menses; overbearing, proud disposition.

Rhus tox., in consequence of taking cold from getting wet.

Secale, after abortus, spasms with full consciousness, afterwards great exhaustion; heaviness in the head and tingling in the legs.

Stramon., opisthotonus and trismus, with congestion to the head; red face; heat of the body; profuse urine; deep, snoring sleep.

Ver. vir., opisthotonus. Other remedies: Amm. carb, Amyl. nitr., Arsen., Cannab., Cuprum, Curare, Hydr. ac., Hyosc., Ignat., Lauroc., Nicotine, Opium, Physostigma.

Catalepsy

Is a sudden loss of all voluntary motory power, so quickly befalling all muscles that the different parts of the body remain precisely in the same position in which the attack finds them, thus making the patient appear like a statue. At first the muscles are rather rigid; but they gradually grow more pliant, assume a waxy flexibility, so that the limbs may be brought into any position, in which they continue to remain. The sensibility and consciousness of the patient is usually gone; he perceives nothing and recollects nothing; whilst in other cases some sensibility seems to remain; and in still others, sensibility and consciousness are entirely undisturbed. The patient sees, hears and knows everything that is going on around him, but is perfectly unable voluntarily to move a single muscle of his body; the link which makes the body an instrument of the soul seems broken. Such fits end in simple forms of the disease often quite as sudden as they come on. The patient draws a long breath, sighs, yawns, and acts as though he was waking out of a deep sleep, and goes on with his interrupted work without even suspecting that anything has happened to him. Such attacks sometimes follow others at short intervals, and they may last only a few minutes at a time.

Graver attacks last hours and days. Skoda mentions one that lasted several months.

Cataleptic spells are frequently combined with hysteria, melancholy, ecstasy, St. Vitus' dance, somnambulism and other nervous derangements. The disease is of rare occurrence and its real exciting causes seem to be mental agitation, anger, fright, sudden joy or fear, grief, disappointment, vexation, ecstasy or religious excitements, etc.

Catalepsy is, by itself, not fatal.

THERAPEUTIC HINTS.—If caused by anger and vexation, Chamom., Bryon.

If caused by *fright*, Acon., Bellad., Ignat., Gelsem., Opium.

If caused by *sudden joy*, Coffea.

If caused by *grief*, Ignat., Phosph. ac.

If caused by *jealousy*, Hyosc., Laches.

If caused by *sexual erethism*, Platina, Stramon.

If caused by *disappointed love*, Ignat., Laches.

If caused by *religious excitement*, Stramon., Sulphur and Veratr.

Epilepsy

Is characterized by spells of sudden loss of consciousness and motor disturbances, under the form of more or less extensive convulsions. These spells recur at irregular periods in the beginning; the intervals are usually free from morbid symptoms; later, however, they are marked by various mental and bodily disturbances. The real seat of the disease has been sought in the pons and medulla oblongata, although a participation of other parts is not denied. *Constant* anatomical changes are thus far unknown, yet, according to the latest investigations, certain histological changes in the bulb of the medulla seem to take the lead of all the others.

One of its most prominent CAUSES is a *hereditary disposition*, developing the disease usually before puberty, or not later than the twentieth year. Other occasional causes are: *lesions of peripheral nerves, of the brain or the spinal cord* ("reflex-epilepsy"); *psychical impressions and emotions, sexual irregularities, digestive disturbances, overexertion and great fatigue.* In short the list of causes is a very large and varied one, and in many instances the cause may be as obscure as the nature of the disease itself.

The *epileptic seizures* are in about one-half of the cases preceded for a day or two by one or the other, or several of the following PREMONITORY SYMPTOMS: sadness and dejection of spirits, or excitement, loquacity, irritableness, quarrelsomeness or distrust; dizziness, headache and confusion of the head; dark coloration of the skin of the face and neck (rare); unusual deep sleep and general well-feeling, or restless sleep and leaden weight in limbs, or slight trembling; voracious appetite, bad smell from the mouth.

The *immediate prodroma* or the so-called *aura epileptica*, which must not literally be taken only as a sensation of breath blowing upon the patient (scarcely ever recognized), but in the wider sense as symptoms which precede immediately the outbreak of the fit, and which last but a short time—these immediate prodroma are of great variety. We have a *sensitive aura*, consisting of tickling sensations, or dragging, tearing pains from the periphery (tips of toes or fingers) towards the head; one-sided headache; pains in epigastrium; or loss of feeling in one extremity, or one-half of the face, taking a centrifugal direction.

A *vasomotor aura* consisting of: paleness, coldness and numbness of one extremity, commencing on the fingers and toes; or redness in spots in various parts of the body; a *motor aura* consisting of: spasms, trembling or shaking motion of different groups of muscles, rumbling in the bowels, straining at stool and on passing water, drawing up of the testicle, palpitations, etc. The *aura of the special senses* consists of: impressions of light and color, or seeing of corporeal figures; hearing of sounds and voices; sensations of disagreeable smell; sensations of a sweet taste. In isolated cases a profuse secretion of tears or perspiration, or an abundant flow of saliva has been observed.

Of these various premonitory symptoms in the individual case, one or several, or none at all may be present; or the one or the other, or several of them may occur repeatedly, without being followed by an actual attack.

The *seizure* itself is characterized by a *loss of consciousness* and *general convulsions*. The loss of consciousness is either sudden and complete, the patient being stricken down as if by lightning, without regard to attitude or surroundings; or a little more gradual, tarrying a second or two, so that the patient can assume some recumbent position voluntarily, to save himself from injury by falling.

The convulsions are, in rare cases, preceded by a short and

sudden relaxation of all the muscles; generally they commence with a tonic spasm, the extent of which is variable, attacking either the entire muscular frame, or one-half of the body (opisthotonus, emprosthotonus), or only some groups of muscles, those of face, throat and larynx—the unearthly shriek in some cases is caused by a laryngeal spasm—or the tonic spasm is wholly wanting, and the scene begins at once with clonic twitchings. During the stage of tonic spasm the color of the face is not in all cases alike; in some the attack begins with pallor, in others with a dark redness of the face, or the color changes from pallor to redness. All this often lasts only a few seconds, sometimes from one-quarter of a minute to one minute.

The *clonic spasm* now following, attacks almost all the voluntary muscles of the extremities, trunk and head, and its violence is often so great as to cause fractures, dislocations, breaking of teeth, deep lacerations of the tongue and rupture of muscles. This tumultuous state is at times interrupted by tonic spasms, so that the patient again becomes rigid. The face assumes a cyanotic color, the eyeballs protrude, and respiration is forcibly quickened, and at times arrested. After the lapse of from half a minute to three minutes, and only in very exceptional cases still longer, the convulsions either stop suddenly, or wear off by degrees until the patient lies quiet, with relaxed muscles, in a deep coma for some minutes longer, when the turgor diminishes and consciousness finally and gradually returns; or the paroxysm is immediately followed by a deep sleep, varying from half an hour to several hours and longer. After consciousness is fully restored the patient feels tired, unnerved, and as if bruised all over, or, in lighter cases, he may find himself wholly in his previous condition, and without recollection of what has happened to him.

The *light form*, **Epilepsia mitior**, is characterized by loss of consciousness without any visible outward spasms, or at most accompanied only by fixation of the eyeball.

The *transition forms of epileptic attacks* consist of spells with loss of consciousness and local spasms.

The *irregular forms of epileptic attacks* are characterized by spasmodic symptoms of a local character with *no* loss of consciousness and sensation, or at the utmost with only a slight confusion and obscuration of the senses. Sometimes the spasms are entirely wanting, and are replaced by *motions of walking and running*. At other times there are recurring attacks of *mental disturbance*, such

as the *delirium epilepticum*, during which an inclination sets in to wander about, or to use obscene language, or to act indecently or foolishly. Very serious cases amount to a *furious mania*, in which the patient is driven by an irresistible force to perform acts of violence, to annihilate everything in his reach, to commit the most shocking murders, etc. The sufferers often relate afterwards that they have had hallucinations of a repulsive and frightful character. The average duration of this maniacal condition may last from two to four days; it may pass off in a few hours.

The *epileptoid states* show themselves like epilepsy, also paroxysmally, and constitute the principal feature of the disease, while the symptoms of the intervals are so little pronounced that no other nervous or mental affection could be recognized in them. Of such the *epileptic vertigo* is the most frequently occurring and the best known.

The *frequency* of epileptic paroxysms varies within extremely wide limits; some patients have one seizure a year, others several in one day. In many patients the attacks occur principally during the night, with others during the day. So exists also a great variety in regard to the forms of the attacks. Some have only hard or grave attacks, others only the light ones, while still others have all the different forms mingled in alternation.

The *interparoxysmal condition* is characterized most frequently by a weakened memory, by a depression of spirits, by gloominess, irritableness, nervousness, distrust and a disposition to get easily angered. Patients decline into marked hypochondria or melancholy; the physiognomy and bearing are altered, the lips of the patients grow thick, their features coarse, finally assuming the expression of imbecility.

In regard to Differential Diagnosis, I shall mention only its *simulation*. An interesting case was detected by Dr. MacDonald upon the following grounds: "First, Clegg was a convict, sentenced to hard labor,—this furnished a strong motive for feigning, and suggested suspicion; second, the occurrence of a paroxysm during my visit to the ward; third, the readiness with which he spoke of his complaint, and called attention to the cicatrices on his face and head; fourth, the marked change in his facial expression when he supposed he was unobserved; fifth, during the spasms the thumbs were not closed within the palms, the nails were not livid, muscular rigidity could readily be overcome, and the hands, after being forced open, immedi-

ately closed; sixth, the sphincters were not relaxed; and, seventh, there were no ecchymoses, extravasations, or minute petechial spots observable upon forehead, throat, or chest. The presence or absence of pallor was not determined by observation in Clegg's case, nor was any value attached to the condition of the pupils."

PROGNOSIS.—As *bad* signs are to be reckoned: attacks which come in irregular groups; great frequency of the paroxysms; sudden attacks without any premonitory symptoms; vomiting, asphyxia, half-sided convulsions, with subsequent paralytic symptoms; long-continued coma, delirium, mania, stupidity after waking up.

More *favorable* signs: short attacks and long intervals between; premonitory symptoms before the attack; milder convulsions, with little embarrassment in respiration; brief or only partial loss of consciousness, and no disturbance of the health in the intervals. Still better is it, when the paroxysms become less frequent, shorter and milder. The outbreak of cutaneous eruptions and ulcers is quite favorable. In regard to CAUSES, we find it unfavorable when the disease is inherited, or is not cured during the age of puberty, or comes on in middle life, or is caused by disorganization of the brain or by continued peripheric irritations of the nervous system, like masturbation. More favorable are those cases which come on during the period of dentition, or are caused by disturbances in the nutritive functions, such as chlorosis, anæmia, lead or alcoholic poisoning; in fact, in all cases where it is possible to remove the cause.

THERAPEUTIC HINTS.—Agar., nictitation of the eyelids; itching, burning and redness of the fingers and toes, as though they had been frozen; after fright; suppressed eruptions.

Amyl. nitr., by inhalation.

Arg. nitr., in boys with old-looking face; after chewing tobacco. Pupils dilated a day or two before the fit.

Arsen., *preceded* by a sense of warm air streaming up the spine into the head; vertigo; loss of consciousness and falling down. *Afterwards* confused and stunned. *During the intervals*, pressive pain in the occiput; burning in the spine; sweet taste in the morning; after eating heavy food, burning in the stomach and bowels; stool irregular, mostly diarrhœic, with burning in the anus; also burning in the glans penis during micturition; frequent cramps in the calves of the legs.

Art. vulg., when there are a number of attacks right after each other.

Bellad., the convulsions commence in the arm; previous, and at the time, congestion of the head; throbbing in temples; during the attack "the right hand clutches at the throat;" *during the intervals*, peevish, angry, scolding, swearing; or fearful and full of anxiety; vertigo; growing dark before the eyes; ringing in the ears; headache, with twitching in the face; flushes of heat in the face; red face; enlarged pupils; jerking and starting in sleep.

Bufo, after fright or onanism; attacks at night followed by some hours of coma; loss of consciousness and falling down; tonic and clonic spasms; turgescence and distortion of face; convulsive agitation of mouth and eyes; bloody salivation; involuntary emission of urine; repeated shocks through the whole body; the lower extremities are more in motion than the upper ones; copious perspiration running down the face.

Calc. ars., pain and oppression in the region of the heart before the fit.

Calc. carb., *before the attack:* chewing motion with the mouth; stretching of the limbs; great restlessness; palpitation of the heart; sense of something running in the arm, or from the pit of the stomach down through the abdomen into the feet. *After the attack:* headache; dizziness; sweat on the head; great thirst; canine hunger; vomiting and diarrhœa. *During the intervals:* stupid, peevish; anxious about getting well; vertigo; headache before breakfast; pale, puffed face; perspires easily, especially on the head; hardness of hearing; eats a great deal and yet loses flesh; thick, swollen belly; too frequent and too profuse menses; swelling of the glands about the neck. *Causes:* fright; protracted intermittent; suppression of chronic eruption. Worse during the solstice and full moon; excited by chagrin or fear; by drinking cold water; by letting the legs swing when sitting. Frequently indicated after Sulphur.

Cauloph., epileptiform spasms during or near the menses.

Caustic., *before the attack:* imbecility of mind; heat of the head, followed by sweat all over; great pressure in the pit of the stomach, extending all over the chest and hindering breathing. *During the spell:* sometimes bleeding of the nose; very red face; biting of the tongue; drawing the head towards one side; urine is passed involuntarily. *Afterwards:* soporous condition; headache; noise in the head; exhaustion. *During the intervals:* on the

scalp and glabella small, round, soft lumps; sweats easily on the head; stoppage of the nose; *tongue coated white on both sides;* sour or sweetish, badly-tasting eructation, like ink or rotten wood; pain in the small of the back, and constant coldness of the shoulders and joints of the feet; great restlessness, which urges him to run away. *Causes:* suppressed itch; protracted intermittent; softening of the brain. Worse during new moon; drinking cold water as soon as the pressure in the stomach commences prevents the attack.

Chin. ars., after the attack cold perspiration, eructations, and a feeling of such utter prostration, that the patient believes he cannot endure it long. (Payne.)

Cicuta, epileptiform spasms from venous congestions of the abdomen in children and women. Bluish, puffed face; eyes staring upon one point; electric shocks; trembling; difficulty of being roused from sleep; small, painful ulcers on the edges of the tongue.

Cimicif., epileptiform spasms at or near the menstrual period.

Coccul., for women of great nervous and paralytic weakness, with suppressed or very painful menstruation; vertigo with nausea.

Cuprum, *before the attack:* nausea, retching and throwing up of phlegm; bloated abdomen; drawing sensation in the left arm; the arm is drawn involuntarily close to the body; formication and tearing in the right hand; shuddering; goose-flesh; palpitation of the heart; or sudden shriek and falling down, without any premonitory signs. *During the spell:* the fingers become dead; involuntary discharge of urine; bluish color of the pit of the stomach and chest; chest and head covered with perspiration. *After the spell:* weeping; headache; profuse discharge of a clear, watery urine; long trembling and shaking of the right hand; sleep. *During the intervals:* anxiety, tendency to be frightened; burning in the chest and abdomen, with chilliness of the remainder of the body; burning and tearing in the small of the back; numbness of the arms. In clearly idiopathic cases, with no organic lesions; worse about new moon; after mental excitement; fright.

Digit., when caused by excessive nightly emissions or onanism, with great weakness of the genital organs.

Gelsem., epileptiform convulsions after suppressed menses, with severe spasm of the glottis; epilepsy, with dull feeling in the forehead and vertex, and some pain and fulness in the region of the medulla oblongata before the attack.

Glonoin., great congestion of the head and heart; during the spasms he spreads his fingers and toes asunder.

Hyosc., before the attack: vertigo; sparks before the eyes; ringing in the ears; gnawing and sensation of hunger in the pit of the stomach. *During the spell:* purple, bluish face; projecting eyes; shrieks; grating of teeth; foaming; discharge of urine. *After the spell:* soporous condition, snoring. *During the intervals:* tearing and beating in the right eye, which weeps and seems protruded; constipation. Causes: jealousy; disappointed love; grief. The attempt to swallow fluids renews the attack.

Hyper., epileptiform spasms, always after striking the body against anything.

Ignat., epilepsy caused by fright and suppressed grief; especially suitable for children.

Indigo, *before attacks:* furious, excitable, easily angered; *between the attacks:* exceedingly melancholic and timid, or gloomy. (L. M. Kenyon.)

Ipec., epileptiform spasms, with shrieks; opisthotonus; pale, puffed face and gastric derangements.

Laches., the patient goes to sleep before an attack, and then is seized with a spasm; creeping sensation from nape of neck down the spinal column; giddiness; headache; peculiar feeling in throat; bloated stomach and bowels; cold feet. In those cases which are caused by onanism, or are in connection with a morbid excitement of the sexual organs; fluor albus; frequent emission of semen; also after jealousy.

Nux vom., painful spot in the abdomen in the region of the solar plexus; pressure upon this spot renews the attack; during interval, constipation; headache every morning; no appetite for breakfast and nausea after eating.

Œnanth. croc., recommended by Drs. Davidson and Oehme.

Opium, nightly attacks; combined with mental derangements; after the attack long soporous sleep.

Plumbum, heaviness and numbness of the legs before the spell; swollen tongue; *afterwards:* long-continued stupid feeling in the head, and want of clear consciousness.

Pulsat., fits before menses; swelling of abdomen before menses; menses too light and scanty; headache principally over right eye; sensation of a lump rising in throat, which causes nausea while eating. (G. W. Cox.)

Secale, shows toxicologic effects, which hint strongly to it, but its sphere of action has not yet been defined.

Silic., *before the attack:* feeling of great coldness of the left side of the body; shaking of the left arm; slumber, with starting. The spasms spread, undulating from the solar plexus up towards the brain; violent screaming; groaning; tears drop out of the eyes; foam at the mouth. *Afterwards:* warm perspiration; slumber; paralysis of the right side; for scrofulo-rachitic individuals; during sleep at night; worse about *new* moon.

Stannum, is recommended as one of the most important remedies, without particular indications; except that its sphere of action is said to have a strong bearing upon the genital organs of both sexes.

Stramon., epileptiform spasms; thrusting the head continually in quick succession to the right; continual rotatory motion with the left arm; pain in the pit of the stomach; obstinate constipation; deep, snoring sleep; low-spirited; fear of death; desire to be alone.

Sulphur, *before the spell:* crawling and running as of a mouse down the back and arms; or a sudden feeling as if a mouse were running from the right foot up the leg to the right side of the abdomen. After the attack, which consists of various convulsive motions, he wipes the tears from his eyes; soporous sleep; great exhaustion; jerkings in arms and about the mouth in cold air. Chronic cases always of psoric taint; suppressed itch.

Tarant., during attack squinting of eyes which remain open; afterwards dejection and dizziness for twenty-four hours.

Ver. vir. and **Zizia** are likewise recommended.

Bromide of Ammonium (Kitchen), Bromide of Potassium (old school), Cyanide of Potassium (J. Dufty).

Eclampsia Acuta.

This is an affection entirely analogous in its external symptoms to epilepsy—sudden loss of consciousness, frequently setting in with a shriek; tonic and subsequently clonic convulsions, which are followed by a comatose sleep. But it is entirely different from epilepsy, in that it always accompanies some other morbid derangement, with the course of which it either ceases, or it ends fatally.

Nothnagel, on the contrary, confines Eclampsia to such cases of epileptiform spasms, "which, independently of positive organic diseases, present themselves as an independent acute malady,

and in which the same processes arise, generally in the way of reflex excitement, and the same mechanism in the establishment of the paroxysms comes into play, as in the epileptic seizure itself."

1. Eclampsia Gravidarum et Parturientium, Puerperal Convulsions.

Its occurrence is rather rare—one in about five hundred pregnancies, and perhaps less than that. During pregnancy it is of a very rare occurrence, and even then is scarcely ever noticed before the sixth month. It occurs most frequently during the act of parturition, seldom during the lying-in period. Primiparæ are most subjected to it, and it sets in mostly during the dilatation of the os uteri, or immediately after the expulsion of the child. According to Frerichs, it has been observed that such women suffer frequently with albuminuria during pregnancy, though this is not invariably the case. During the lying-in time these convulsions are generally the commencement of inflammation of the womb. The attack itself is characterized by the same convulsive features as are described under epilepsy. When setting in during pregnancy, these convulsions generally cause contractions of the womb and abortus; when at the beginning of labor-pains, they frequently retard the natural progress; but when towards the end of parturition, they are apt to hasten the expulsion of the fœtus. After the birth of the child the contractions of the womb generally cease; and this may give rise to hæmorrhages, retention of the placenta and inflammatory processes of the womb. The convulsions themselves may continue for hours afterwards, though they are mostly of less intensity. The influence upon the child is, according to Scanzoni, not necessarily fatal; about one-half of them are said to die. The later the convulsions begin the greater is the chance for the child, and *vice versa*. The Prognosis is doubtful; the earlier they commence the more so.

THERAPEUTIC HINTS.—As albuminuria is frequently a forerunner of this terrible complaint, the patient ought to be carefully treated during pregnancy. Compare Albuminuria.

Atrop. sulph. (Szontagh.)

Bellad., deep red face; enlarged pupils; screaming; jerking and general convulsions; all which are signs of cerebral congestion.

Chin. sulph., albuminuria; tetanic spasms with loss of conscious-

ness during parturition and afterwards; swollen veins on the head and neck; pulse frequent, intermittent and weak.

Cuprum, during the lying-in time; sour-smelling sweat; miliary eruption; anxiety; easily frightened; heaviness of the head; soreness of the abdomen to pressure; burning in the small of the back; numbness of the arms. "Spasms commence with cramps in fingers and toes; hands and feet turn outward." (Gwynn.)

Gelsem., during pregnancy, and where there is an anæmic condition present; protracted labor; rigid os uteri.

Hyosc., cold perspiration; pale face; suffocating spells and convulsions during parturition; facial muscles greatly agitated.

Ignat., twitching of muscles of mouth and eyes; wild expression; eyes upturned; constantly attempting to pull her hair; laughing and crying; nervous, excitable. (I. D. Johnson.)

Laches., the convulsions commence upon the left side of face, and continue longer and are more severe about the neck and throat than elsewhere. (Minton.)

Opium, during parturition; cessation of labor-pains; coma; retention of stool and urine; after a fright.

Platina, after parturition; profuse hæmorrhage; yawning; convulsions.

Stramon., excited, scolding, striking, spitting, crying and laughing; face flushed, pupils dilated, in great terror. Spasms; writhing and floundering in manifold gyrations; every muscle in play. (O. P. Baer.)

Ver. vir., during parturition; also after blood-letting, during the puerperal convulsions, causing furious delirium; cold, clammy perspiration; turgid and livid face; hideous expression of countenance; great activity of arterial system.

Also compare the hints under the head of Epilepsy.

2. Eclampsia Infantum, Convulsions of Children.

By this term is understood convulsions of children, during which they lose their consciousness more or less completely, which come on in spells, run an acute course and are generally connected with some other morbid process. There exists no stricter definition as yet.

Eclampsia attacks by preference boys during the first years—stout as well as sickly—especially during dentition. It often breaks forth at the commencement of exanthematic fevers, also

instead of the *chill* in intermittent fever; succeeds a sudden fright of the mother in the event of her suckling the child immediately. It may be caused by fright, fear of punishment, strong light, tickling, or violent pain; intestinal irritations from worms, indigestible food, such as raisins, cakes, the pulp of oranges, etc. These convulsions are characterized by loss of consciousness; spasms all over; congestion of the head; cyanotic appearance of the face, or, in anæmic children, paleness of the face; snoring; rattling breathing; sometimes vomiting or involuntary discharge of urine and feces. They sometimes follow each other in rapid succession and may terminate life unexpectedly in consequence of asphyxia; as a rule, however, they yield readily to the appropriate homœopathic remedy.

THERAPEUTIC HINTS.—Acon., great restlessness; high fever; dry skin, after fright; from irritation of seat-worms; from taking cold; in consequence of inflammatory affections of the spine; during teething.

Apis, shrieking; boring the head into the pillows; inflammatory affections of the brain.

Arsen., spasms, preceded by burning heat of the whole body, with constant licking of the dry, cracked lips; wants to drink constantly, but little at a time; is hasty in all its motions; grasps the tumbler or anything it wants eagerly; is very restless, with anxious expression of the face.

Bellad., glowing-red, as well as a pale face, with enlarged pupils; great heat in the head; great vascular erethism; drowsiness, with inability to sleep; starting and jerking during sleep; grating of teeth; especially during dentition; scrofulous diathesis.

Calc. carb., the anterior fontanel remains wide open; glandular swellings about the neck; teething process is either very slow or else too rapid; much perspiration about the head; greatly inclined to take cold; hard, swollen abdomen; rather inclined to looseness of the bowels; often indicated after Bellad.; one of the most important remedies during dentition; scrofulous diathesis.

Camphora, anæmic subjects; coldness of the whole body.

Chamom., one cheek is red, the other pale; hot perspiration on the head, especially on the hairy portion; great thirst; bloated bowels; colicky pains; greenish discharges; sour vomiting; constant moaning and groaning; restlessness; the child wants to be carried about all the time. During sleep a suspicious work-

ing of the muscles of the face, as if smiling; during dentition; also, after nursing the breast of a woman laboring under the effects of a recent fit of passion.

Cicuta, especially when the child, without any premonitory signs, becomes suddenly stiff, with his eyes fixed upon one point; also in violent spasms of the head and the upper portion of the body; with bluish and puffed face; also in convulsions from worms.

Cuprum, in anæmic conditions; shrill cries during the attack; drowsy and stupid condition during the intervals, with nausea and vomiting of slime; bloated abdomen, with involuntary, thin discharges from the bowels; also when the child loses its breath from crying, and draws its feet spasmodically upwards and backwards upon the nates.

Cypripedium pub., in the premonitory stage, when there is a morbid irritability of the brain, in consequence of which the child is very excitable, laughs and plays at unwonted hours; is very wakeful and laughs even in sleep.

Gelsem., during dentition, with sudden loud outcries; feverishness.

Hyosc., congestion of the head; bloated and dark face; protruding eyes; shrieks; foam at the mouth; involuntary discharges of urine; from fright or fear.

Ignat., violent convulsions; often tonic spasms predominant; nervous temperament; during dentition; during the commencement of exanthematic fevers; after fright, or when children have been punished and go to sleep soon afterwards.

Ipec., pale face; nausea; vomiting; almost always when caused by eating indigestible food: raisins, pound-cake, the pulp of an orange, etc.; or when the eruption of an exanthematic fever strikes in by taking cold.

Melilot., during dentition with great congestion to the head. (Bowen.)

Opium, trembling of the whole body, convulsive motions of the extremities; soporous condition with snoring; retention of stool and urine; after a fright; or from nursing soon after a sudden fright of the mother.

Platina, in anæmic subjects; tonic spasm without loss of consciousness; trismus; pale, sunken face; after the spell the child lies on its back, draws up its limbs and spreads its knees.

Stannum, renewal of convulsions with the cutting of every tooth; also in consequence of worms.

Stramon., congestion of the head; heat all over the body; red face; spasmodic thrusting of the head in all directions; profuse urine; deep, snoring sleep.

Sulphur, often when all other remedies fail; after suppression of eruptions; diarrhœa in the morning; during the eruptive state of scarlatina.

Ver. vir., convulsions with opisthotonus; anæmic subjects in consequence of diarrhœa.

Zincum, screaming and starting in sleep; anxious look when getting awake; heat of the body and nightly restlessness; twitching and jerking of different muscles, more on the right side than on the left; irritable mood; great appetite; bloated abdomen; involuntary discharge of urine. According to Kafka, during dentition in children with pale blood.

Tremor, Trembling.

This affection is of very frequent occurrence, and of various forms. Sometimes the head trembles, while the motions of the arms go on normally. Some persons tremble during rest as well as when in motion; others, only during rest; a majority, however, during motion. During sleep all trembling ceases; also frequently when in a horizontal position, or in a position in which the trembling extremity rests firmly upon support elsewhere. Reflex motions are performed sometimes tremblingly, sometimes normally, while all automatic motions almost always remain undisturbed. Exertion of the will sometimes aggravates, sometimes masters the tremor; and during intense interest upon a subject it may cease entirely. Trembling may be partial, confined to the upper extremities, or extend over all the muscles, so that even the muscles of the face and jaws are involved. It is mostly of a transient character; sometimes part and parcel of a disease; sometimes, however, it becomes habitual, chronic, lifelong. In children, it is found only occasionally, never of long duration. Old age is especially subject to it (tremor senilis). We find it likewise more amongst women than men. Brain and spinal diseases (softening and atrophy) are mostly attended by it.

It is brought on especially by the vapors of mercury; lead-poisoning; opium-eating, and abuse of alcoholic drinks, and tobacco. It may be the result of typhus, and an effect of sexual excesses. Temporarily it may be caused by mental excitements, overexer-

tions of the muscles, too much coffee or tea-drinking, and too low a temperature. To the latter corresponds the trembling during the chilly stage of intermittens. Likewise we find trembling easily excited after being tired out, mentally depressed, or exhausted in any way; and therefore it is frequently found during convalescence, after epileptic fits, catalepsy, neuralgia, and during the periods of menstruation and lactation.

The *mercurial tremor* greatly resembles paralysis agitans (of which next), in its extent, its secondary paresis and the accompanying cerebral and psychical symptoms. The *lead tremor* is, as a rule, limited to the upper extremities and some facial muscles (orbicularis, levator anguli oris), and is accompanied by numerous other symptoms of lead-poisoning. The *alcohol tremor* usually begins in the hands, from whence it may spread all over the body; it is worst in the morning during fasting, and alleviated by the use of spirits. The *opium tremor* is always associated with other opium symptoms, such as contracted pupils, constipation, etc.; and the *nicotine tremor* most frequently attacks only one side, or at least one side more than the other, and is generally accompanied with various nervous disturbances such as muscular weakness, dizziness, neuralgia, myosis, etc.

THERAPEUTIC HINTS.—Compare multiple sclerosis, paralysis agitans.

Mercurial tremor: Carb. veg., China, Hepar, Laches., Nitr. ac., Sulphur, etc.

Lead tremor: Alum., Bellad., Hepar, Nux vom., Opium, Platina, Stramon., etc.

Alcohol tremor: Arsen., Ipec., Nux vom., etc.

Opium tremor: Bellad., Chamom., Ipec., Mercur., Nux vom., etc.

Nicotine tremor: Arsen., Chamom., Coccul., Cuprum, Ignat., Nux vom., etc.

Other tremor: Calc. carb., Cicuta, Mercur., Opium, Plumbum, Platina, Pulsat., Rhus tox., Stramon., Sulphur.

The feeling of internal trembling: Calc. carb., Iodium, Rhus tox., Staphis.

Paralysis Agitans, Shaking Palsy,

Consists of a gradually increasing motor weakness and a trembling in the voluntary muscles of the body, the latter preceding

the paralytic symptoms. In its external manifestation it appears as a tremor of high degree; but differs from it by its constantly increasing intensity, and by its liability to terminate in paralysis and death.

It commences lightly, as a feeling of weakness, with slight trembling of the upper extremities or of the head. The patient is still able to execute all voluntary motions, and the trembling at first is not constant and may be mastered by the influence of the will. In some cases the tremor is limited to only one-half of the body, but in others it increases in intensity and becomes a perfect shaking of the whole body, by which even the bed upon which the patient rests is set in motion. In general the trembling is independent of voluntary or passive movements, and by this it is distinguished from chorea and from the trembling in disseminated sclerosis of the nervous centres.

Sleep, and easy position, which at first will stop the shaking, eventually lose this effect; and the skin of the patient becomes sore in different places from the friction occasioned by the continued shaking, which the patient is unable to control. There are, however, more or less frequent spells of remission. In some cases the patient has an irresistable desire to *run*, either forwards or backwards, which at first he can resist to a certain degree, succeeding in making some uncertain steps on his toes; but at once he falls into a hasty run, until he regains control over these involuntary motions. At length, however, he cannot walk at all, but must be held back from these pitching forward or backward motions.

To all this are gradually added: general exhaustion, great sensitiveness of the whole body, paralysis of the voluntary muscles, difficult deglutition, relaxation of the sphincters, with involuntary discharge of feces and urine, bed-sores, until, attended by the loss of mental capacity and delirium, death relieves the patient.

Its Causes are obscure. It is said to have followed the taking of cold and after mental excitements; and its seat is supposed to be in the pons and upper part of the medulla oblongata, although other autopsies do not sustain this supposition; thus far its anatomical basis is undecided.

The Prognosis is unfavorable.

THERAPEUTIC HINTS.—Compare Arsen., Baryt. carb., Caustic., Lycop., Mercur., Phosph. ac., Rhus tox., Stramon., Tarant., Zinc.

Paralysis, Akinesis,

Is an abolition of the faculty of exciting the normal function of the motor nervous apparatus and the muscles. A mere diminution of voluntary movableness, attended with a sense of fatigue, is termed **Paresis.** The latter may gradually pass into paralysis.

Paralysis may *arise:*

1. From destruction or functional incapacity of those parts of the cerebrum, or of the ganglia at the base of the brain, or of the cerebellum, in which volitional impulses are probably converted into motor excitations (central paralyses).

2. From diminution or abolition of the conductivity of the motor *nerves* on any place of their course, from their origin in the brain and spine to their terminations (*paralyses of conduction*).

3. From abolition of excitability and contractibility of the muscles (*myopathic paralyses*).

The Causes of paralysis are: *wounds,* occurring of course more frequently in the peripheral nerves than in the brain or spine (*traumatic paralyses*); *diseases of parts in the neighborhood of the nerves,* such as exostoses, caries, aneurisms, echinococci, enlarged glands, herniæ, tumors, etc.; *diseases of the nervous system,* such as neuritis, myelitis, encephalitis, cerebral and spinal apoplexies, softenings, scleroses, tumors, etc.; *disturbances of the circulation,* such as ischæmia, embolism, thrombosis, venous stasis, etc.; *poisoning of the blood by vegetable alkaloids,* such as woorare, ergotine, nicotine, saponine, hydrocyanic acid, camphor, etc., and *metallic preparations,* such as lead, etc.; *acute diseases,* such as acute exanthemata, erysipelas, typhoid fever, cholera, dysentery, acute articular rheumatism, diphtheritis; *chronic infectious diseases and cachexiæ,* such as syphilis and scrofulosis; *catching cold; exhaustion of the nervous system,* by forced marches, excesses in venere, night watching, excessive mental exertion, etc.; *reflex action* from some primary disease, injury or irritation of the nerves at the periphery —*reflex paralyses.*

Paralysis may *extend* over a single muscle, or a group of muscles; over one-half of the body (**Hemiplegia**), usually caused by a lesion in the brain on the opposite side, though it may also be of spinal origin; or over both halves of the body symmetrically, commencing usually in the lower extremities and spreading to trunk and upper extremities (**Paraplegia**).

As concomitant and secondary symptoms of paralysis may be men-

tioned: *relaxation* or *contraction* of the affected muscles; *want of all reflex and automatic movements*, when there is interruption of the conduction in the peripheric motor nerves (or when the muscles are destroyed); *an increase* of *reflex* activity so long as the reflex mechanism is not destroyed; *associated movements* in the paralyzed parts, in many cases where the paralysis is of centric origin above the centre of such associated movements; *disturbances* of *automatic movements*, especially of *respiration* in lesions of the lateral columns of the spinal cord in the dorsal and cervical regions; when the respiratory centre in the medulla oblongata is affected, asphyxia is soon produced; in purely cerebral paralyses respiration continues undisturbed; retention or involuntary passage of *urine* or of the *contents of the bowels* in various forms of paralyses; *anæsthesia*, if the disease affects a peripheric mixed nerve trunk, or when the cause of paralysis affects coincidently sensory nerves either in the brain or spine; *hyperæsthesia* of the parts and *paræsthesia* (formication, numbness, creeping, burning, etc.) in consequence of irritations set up in the neighborhood of morbid processes, which cause paralysis; *disturbances* of the *intellectual faculties* are found only in paralysis of cerebral origin; coldness of the parts with passive hyperæmia and cyanosis, especially in traumatic paralyses; *atrophy* of the skin, *vulnerability* of the skin, so that slight exposure to cold, pressure or irritation produces sores; *deformity of the nails;* falling off of the hair on the paralyzed limb; *atrophy of the muscles and bones; cirrhosis of the muscles*, and *increase* of the *interstitial tissue; enlargement* and *hypertrophy* of the *lymphatic glands.* All these trophic changes are especially found in traumatic paralyses, less often in spinal, and still more rarely in cerebral paralyses.

The Diagnosis between these three forms may be broadly stated as follows:

Peripheral paralyses are limited to the region supplied by one or a few nerve trunks; they are almost always associated with anæsthesia; reflex, automatic and associated movements are absent; spasms occasioned by central disease do not extend to the paralyzed muscles; trophic disturbances, especially atrophy of the muscles are well marked at an early date; absence of all signs indicating spinal or cerebral disease.

Spinal paralyses occur most frequently as paraplegia: attacking symmetrical groups of muscles belonging to the lower extremities, trunk, belly, and upper extremities, progressively in accord-

ance with the height which the disease has reached in the spinal cord (lumbar, dorsal or cervical regions); they are frequently accompanied by numbness, formication, etc., in the feet, by pain in the back, and a sensation of constriction around the body; they are characterized by incontinence or retention of urine, by priapism, pollutions, spermatorrhœa and impotence; respiration is affected only when the corresponding part of the cord is involved; myosis in cervical lesions; convulsive movements proceeding from the brain do not extend to the paralyzed parts; trophic disturbances may and may not be present; psychical affections and affections of special senses are usually absent.

Cerebral paralyses, from extravasation of blood, embolism, tumors, etc., are usually hemiplegia upon the opposite side of the body; sometimes, however, it is limited to particular nerves and plexuses; reflex actions are almost always preserved and frequently increased in energy; associated and automatic movements are usually unaltered; motor irritation (contractures, twitchings and spasms) are not unfrequent in the affected parts; epileptic convulsions occur also in the paralyzed parts; atrophy of the muscles scarcely ever occurs, except in paralysis of the pons; psychical disturbances and disturbances of the higher senses are quite characteristic, and frequently *aphasia* (intellectual) or *alabia* (peripheric disturbances of speech) occur. Cerebral *paraplegia* is very rare, and generally occurs in the form of two separate hemiplegiæ, one side being more severely attacked than the other.

Myopathic paralyses commence in particular muscles and gradually spread to others, frequently from one muscular fasciculus to another; they are preceded by atrophy; they are accompanied by fibrillar contractions and pain in the muscles, a diminution of the electrical excitability, and the presence of a demonstrable local cause.

THERAPEUTIC HINTS.—**Acon.**, from congestion of spinal cord, attended with numbness of the parts.

Aesc. glab. is recommended for paralytic affections of the lower extremities.

Aesc. hipp., for paralysis of the upper extremities; back and legs weak.

Agar., paralysis of lower limbs with slight spasms of arms; pain in lumbar region and sacrum; crosswise affections.

Alum. met., paralysis from spinal diseases; loss of sensibility of the feet; inability to walk except with open eyes, and in the daytime.

Anac., after apoplexy; loss of memory; imbecility of mind; loss of will.

Apis mel., one side paralyzed, the other twitching; cerebral origin.

Arg. nitr., paraplegia from exhaustion.

Arnica, in consequence of exudations within the brain or spine; in consequence of apoplexy, of concussions, of weakening diseases, of protracted intermittent fevers and ischias.

Arsen., when associated with great prostration and neuralgic pains; also in spinal affections with gressus gallinaceus, and as an antidote to lead-poisoning.

Baryt. carb., general paralysis of old age, with loss of memory and trembling of the limbs; also after apoplexy in old age, and especially in paralysis of the tongue.

Bellad., apoplexy; congestion of the head; paralysis of the one and spasm of the other side of the body; paralysis of the face; locomotor ataxy.

Cauloph., paraplegia in consequence of retroversion and congestion of the womb after child-birth, with partial loss of sensation in the affected limbs; considerable emaciation, anæmia and general debility.

Caustic., paralysis of the face or tongue or hemiplegia, with giddiness, weakness of sight, weeping mood; hopelessness; fear of death; drawing, lame feeling in the affected part; after exposure to severe, cold winds; catarrhal and rheumatic conditions; suppressed itch or other chronic eruptions; apoplexy.

China, after great loss of blood.

Cina, paraplegia with unnatural hunger. (Lounsbury.)

Coccul., paralysis of face or tongue or pharynx; paraplegia; rheumatic lameness; in weakened and nervous subjects, who are inclined to fainting fits and palpitation of the heart; also when the paralytic affection originates in the small of the back after taking cold, with cold feeling of the extremities and œdema of the feet; likewise after apoplexy.

Colchic., after a sudden suppression of general perspiration or of sweat of the feet by getting wet.

Conium, paralysis from periphery upwards; old women; humid tetters.

Cuprum, after apoplexy, when there is congestion in the chest, strong palpitation of the heart, or slow, weak and small pulse; the eyelids keep closed and twitch; when opening the eyes, the eyeballs move about; paralysis after cholera and typhus; paralysis commencing at the periphery and progressing towards the centre.

Curare, nervous debility from loss of fluids or after exhausting illness.

Dulcam., after taking cold, and suppressed eruptions; paralysis of the upper and lower extremities, and the tongue; the paralyzed arm feels icy cold.

Ferrum, after great loss of vital fluids.

Gelsem., loss of motion, but not sensation; paralysis of the organs of deglutition, and in aphonia, succeeding diphtheria; locomotor ataxia; paraplegia.

Graphit., rheumatic, peripheric paralysis of the face.

Hepar, after mercurial poisoning.

Hyosc., after spasms.

Ignat., after great mental emotions and night-watching in the sick-chamber; hysterical paraplegia.

Kali carb., trembling; paralytic weakness, with cramps in fingers and hand; also paralytic weakness in the hip-joint.

Kali phosph., after exhaustion of nerve power, after hysteria.

Laches., especially left side; awkward, stumbling gait; gressus gallinaceus; after apoplexy.

Mercur., rigidity and immobility of all the limbs, although they can be easily moved by others; indescribable malaise of body and soul; trembling of limbs and body; paralysis agitans.

Natr. mur., paralytic condition of the lower limbs; painful contraction of the ham-strings; after intermittent fevers, diphtheria, sexual excesses, and violent fits of passion.

Nux vom., incomplete paralysis of the face, arms or legs, with vertigo; weak memory; darkness before the eyes; ringing in the ears; loss of appetite; burning in the stomach; flatulence; vomiting after eating and drinking; constipation; especially in drunkards; after apoplexy, mental overexertion.

Oleand., painless stiffness and paralysis of the limbs; insensibility of the whole body; trembling of the knees when standing, and of the hands when writing; preceded by spells of vertigo a long time before paralysis develops itself.

Opium, paralysis and insensibility after apoplexy; in drunkards; in old people; retention of stool and urine.

Ox. ac., paralysis from inflammation of spinal cord; limbs stiff; paroxysms of dyspnœa.

Phosphor., paralysis in consequence of spinal affections; after sexual excesses; after confinement; tingling and tearing pain from the back down into the limbs; gressus vaccinus.

Picric ac., after tonic and chronic spasms; on standing keeps legs wide apart, looks steadily at objects as if unable to make them out; wasting palsy.

Plumbum, paralysis complete, with atrophy of the affected parts, preceded by trembling; mental derangement.

Psorin., after debilitating acute diseases.

Rhus tox., rheumatic paralytic affections after getting wet, and after great or unwonted muscular exertions, strainings, etc.; in consequence of typhoid processes; with painful stiffness, tearing, drawing and aching of the whole body; sometimes with tingling and numbness of the parts, or continued cold feet for a long time; worse during rest, and when commencing to move, from washing in cold water, with every change of the weather; better from dry heat near the stove, from continued gentle moving about, and flexion of the limbs.

Ruta, facial paralysis after catching cold.

Secale, paralysis after spasms and apoplexy, with rapid emaciation of the affected parts, and involuntary discharges from bowels and bladder.

Silic., paralysis of the left hand, with atrophy and numbness in the fingers; paralysis of the legs, always worse in the morning, with heaviness of the head and ringing in the ears.

Stannum, hemiplegia, especially on the left side, with a feeling of a heavy load in the affected arm and corresponding side of the chest, and frequent night-sweats.

Stramon., after convulsions; also paralysis of the one and spasms of the other side.

Sulphur, after typhus, exanthematic fevers, suppressed itch or chronic eruptions and spasms; also when other remedies seem to fail.

Tarant., numbness and formication and loss of motor power.

Zincum, worse after drinking wine; great restlessness of feet; after suppressed foot-sweat.

Besides, compare the following, which are partly taken from Jahr: for—

Paralysis of the eyelids: Arnica, Arg. nitr., Bellad., Canthar.,

Coccul., Cupr. ac., Euphorb., Gelsem., Hyosc., Nitr. ac., Opium, Plumbum, Rhus tox., **Sepia**, **Spigel.**, Stramon., **Veratr.**, Zincum.

Paralysis of the face: Bellad., Caustic., Coccul., Graphit., Nux vom., Opium.

Paralysis of the tongue and organs of speech: Acon., Arnica, Arsen., Baryt. carb., Bellad., Caustic., Coccul., Cuprum, Dulcam., Hepar, Hydr. ac., Hyosc., Laches., Mur. ac., Opium, Plumbum, Stramon.

Paralysis of the organs of deglutition: Bellad., Canthar., Caustic., Coccul., Cuprum, Gelsem., Laches., Silic., Stramon.

Paralysis of the bladder: Arsen., Bellad., Canthar., Dulcam., Gelsem., Hyosc., Laches., Lycop., Natr. mur., Opium.

Paralysis of the rectum and sphincter ani: Caustic., Coloc., Hyosc., Lycop., Opium, Phosphor., Ruta, Zinc. sulph.

Paralysis of all the limbs: Arnica, Arsen., Colchic., Dulcam., Gelsem., Mercur., Nux vom., Rhus tox., Sanguin.

Paralysis of the upper extremities: Acon., Æsc. hipp., Arnica, Bellad., Calc. carb., Caustic., China, Coccul., Colchic., Dulcam., Lycop., Mercur., Nitrum, Nux vom., Rhus tox., Sepia, Tart. emet., Veratr.

Paralysis of the hands: Ambra, Arsen., Caustic., Cuprum, Ferrum, Natr. mur., Rhus tox., Ruta, Silic.

Paralysis of the fingers: Ambra, Calc. carb., Cuprum, Natr. mur., Secale, Silic.

Paralysis of the lower extremities: Alum., Arnica, Bellad., Bryon., China, Coccul., Colchic., Dulcam., Kali carb., Mercur., Nux vom., Phosphor., Plumbum, Rhus tox., Secale, Sulphur, Veratr.

Paralysis of the feet: Arsen., China, Oleand., Plumbum.

Hemiplegia: Alum., Anac., Arg., nitr., **Arnica**, Bellad., **Caustic.**, China, **Coccul.**, Dulcam., Graphit., Hyosc., Kali carb., Laches., Mercur., Phosph. ac., Plumbum, **Rhus tox.**, Sepia, Stannum, Staphis., Stramon.

Left sided hemiplegia: **Arnica**, Arsen., Bellad., **Caustic.**, **Laches.**, Rhus tox.

Right sided hemiplegia: **Arnica**, Bellad., **Caustic.**, **Rhus tox.**

Paralysis of one and spasms of the other side: **Bellad.**, Laches., Stramon.

Paraplegia: Coccul., Nux vom., Lauroc., Secale and others.

Paralysis in consequence of—

Mental emotions: Arnica, Ignat., Natr. mur., Stannum.

Bodily exertions: Arsen., Arnica, Rhus tox.

Spasms: Arsen., Caustic., Coccul., Cuprum, Hyosc., Lauroc., Nux vom., Plumbum, Rhus tox., Secale, Silic., Stannum, Stramon., Sulphur.

Apoplexy: Arnica, Anac., Baryt. carb., Caustic., Cuprum, Laches., Nux vom., Plumbum, Secale, Stannum, Stramon., Zinc.

Taking cold: Arnica, Caustic., Colchic., Dulcam., Mercur., Rhus tox.

Getting wet: Caustic., Nux vom., Rhus tox.

Suppression of sweat: Colchic.

Onanism, sexual excesses: China, Coccul., **Ferrum, Natr. mur., Nux vom.**, Sulphur.

Rheumatism: Arnica, Baryt. carb., Bryon., Canthar., Caustic., China, Coccul., Ferrum, Gelsem., Lycop., Ruta, Sulphur, Tart. emet.

Intermittent fevers: Arnica, Arsen., Laches., Natr. mur., Nux vom., Rhus tox.

Typhus fever: Coccul., Cuprum, Nux vom., Rhus tox., Sulphur.

Diphtheria: Arsen., Gelsem., Laches., Natr. mur.

Cholera: Cuprum, Secale, Sulphur, Veratr.

Suppressed eruptions: Caustic., Dulcam., Hepar, Sulphur.

Poisoning by arsenicum: China, Ferrum, Graphit., Hepar, Nux vom.

Poisoning by lead: Cuprum, Opium, Platina.

Poisoning by merc.: Hepar, Nitr. ac., Staphis., Stramon., Sulphur.

Infantile Wasting Palsy, Essential Infantile Palsy.

As the name indicates, a disease of childhood, by some considered of spinal origin from inflammation in the anterior cornua and lateral columns, and terminating in progressive atrophy of the muscles affected.

The attack is often ushered in by febrile symptoms of varied intensity and duration (from twelve hours to several days), or by convulsions; or more or less general paralysis sets in suddenly without any prodroma. Usually the paralysis localizes itself in one or two limbs, or only in some groups of muscles, or attacks limbs and trunk together, but never the head nor the sphincters. The intellectual faculties remain unimpaired. The affected muscles soon become flaccid and flabby, and the ligaments relaxed. In about two weeks or thereabout the wasting of the muscles shows plainly, especially on the legs, arms and shoulders; the bones grow thinner; the diseased limb ceases growing. The

skin appears tough, cool, of a bluish color, and frequently somewhat œdematous. The relaxation of the ligaments in conjunction with the contraction of remnants of sound muscles causes subluxations and luxations of the joints, so that deformities, like club-foot, genu varum, etc., are of frequent occurrence.

With all this, sensation remains normal, or in some cases it is heightened to hyperæsthesia.

Improvement often takes place and usually the arms recover their power quicker than the legs.

THERAPEUTIC HINTS.—Compare Paralysis and Spinal Diseases.
Acon., if the disease commences with the peculiar Aconite fever.
Bellad., **Calc. carb.** and **phosph.**, during dentition.
Phosphor., fatty degeneration of the muscles.
Sulphur, **Psorin.**, if there is any psoric taint.
Thuja, after vaccination.
Besides: Arsen., Caustic., Coccul., Gelsem., Plumbum, Secale.

Hydrophobia, Lyssa, Rabies.

"**Hydrophobia** in the human subject is an acute infectious disease, produced by a specific virus, which is inoculated almost without exception, by the bite of a rabid animal (dog, wolf, fox, cat, skunk, horse, ox, etc.), most frequently that of the dog. Infection from man to man may be said practically never to occur." (Bollinger.) Neither is it known that the consumption of the meat or milk of rabid animals ever produced the disease; but numerous observations make it quite probable "that dogs may, by their bite, produce hydrophobia in the human subject, even during the period of incubation of the disease." (Bollinger.) A wound from the bite of a dog should, therefore, always be considered with suspicion; but instead of killing the dog on the spot, as is frequently done by ignorant people, he should be put under strict surveillance until it is proved whether he was mad or not. This will remove, in many cases, the fear and anxiety of those concerned; for the bite of a mere vicious dog cannot produce hydrophobia.

And it ought also to be stated here, that not everyone who is bitten by a mad dog, must necessarily become ill and die of hydrophobia. "Out of 855 human beings bitten by rabid dogs, 299 (or nearly one-half) cases ended fatally. But if we include also the bites of dogs suspected of being rabid, the proportion becomes

decidedly more favorable, 8 per cent. only of those bitten becoming ill and dying. Out of 1,362 human beings that had been bitten by rabid dogs, and dogs suspected of being rabid, there occurred 105 fatal cases. How great an influence is exerted upon this final result by *individual predisposition*, or by other factors which are accidentally brought into play at the time of the bite (clothing, deposit of the saliva upon the garments, the extent of the hæmorrhage, the nature and location of the wound), is difficult to determine." (Bollinger.)

The *nature* of the wound may be very trifling: a mere abrasion of the skin, capable of absorbing the virus, may be sufficient for a fatal termination. Large wounds have been considered less dangerous than small ones, because the virus, it is said, is more easily washed out by the flow of blood; but with this, facts do not agree. In regard to their *location*, wounds in the face are the most dangerous, next, those on the hands and on the body, lastly, those on the lower and upper extremities.

The wounds usually heal readily, with a striking *absence* of any inflammatory tendency, and then follows the period of **Incubation** which varies greatly in length. It seldom is less than two weeks, most frequently lasts from three to six months, and in extremely rare cases two years and more. During all this time the persons bitten feel for the most part quite well, only of some it is said, that touching the scar produced peculiar sensations, such as shuddering, feeling of anxiety, and sighing.

The Premonitory Symptoms are in many cases very little characteristic. The original wound usually is presented by a mere scar, and becomes in exceptional cases only inflamed and swollen, and of a reddish or bluish hue. At times tearing pains proceed from the wounded parts, or peculiar sensations, such as prickling, boring, or burning. In some cases little blisters have been observed under the tongue. The patient loses his appetite, complains of headache, and becomes depressed and gloomy, and then again ill-natured, apprehensive, excitable, and agitated by an indescribable feeling of anxiety, especially when he himself refers his bad feelings to the bite as the cause. He speaks of it and its impending fatal result in a remarkable quick and sharp manner. He now becomes sleepless and restless, and the ominous symptom of *aversion to fluids*, and *great sensitiveness to every breath of air* and *reflection of light*, is the beginning of the

Second stage, the stage of *hydrophobic spasms*. However, it

should be stated that this stage in some cases sets in abruptly, without any precursory symptoms, *with a sudden inability to drink*, which is soon followed by general *convulsions* of a paroxysmal character, or brought on by an attempt to drink water, by a sudden fright, or by any agitation.

The inability to drink depends upon peculiar spasms of the muscles of *deglutition*, induced by an attempt to drink, or by the mere sight of water or glistening objects, so that after a while, notwithstanding the most intense thirst, the patient will rather endure the latter, than be subjected to these agonizing spasms—*hydrophobia*. With it are associated *spasms of the muscles of respiration*, induced by a draught of air, or by the opening and closing of a door—*aërophobia*—which cause dyspnœa and a feeling of suffocation, sighing and groaning respiration, and the utterance of shrill, inarticulate sounds, resembling almost the hoarse bark of a dog. The general convulsions appear with variable degrees of intensity, from slight muscular contractions, trembling of the limbs, to the most severe convulsions of a clonic character, less frequently amounting to tetanic convulsions. These paroxysms are sometimes associated with maniacal raging and hallucinations, which the patient vents upon those around him, by abusing them and snapping at them. They are of variable duration, lasting from one-half to three-quarters of an hour. However, in exceptional cases they are absent, and the patient is able to swallow fluids, although the act is accompanied by pain. In some cases drinking succeeds when the patient is left alone, or when he closes his eyes, and uses the aid of a straw. So also are warm drinks, such as milk, soups, also wine often more easily taken than water. But in most cases the swallowing is impossible for fluids as well as for solids.

The paroxysms are followed by periods of rest of equally variable duration, during which the patient recognizes his surroundings, and answers questions correctly; but his voice is suppressed, and he appears extremely apprehensive, or talkative, and is in most cases sleepless. At other times an intellectual disturbance continues even during the absence of the spasms, and the patient sees objects which are not present, or imagines that his sufferings are caused by those around him, and he consequently rages and defends himself against these imaginary attacks and insults.

The *face* of the patient is red, and expresses the greatest mental and physical misery and the most horrible agony. The eyes are

wild, rolling, staring and livid; the eyeballs are injected, the pupils dilated, and the retina exceedingly sensitive to light. In some cases the face is pallid and cyanotic and the expression stupid.

The *mouth* is full of viscid saliva which, as it can not be swallowed, is constantly discharged, or incessantly ejected in all directions. The *tongue* usually is moist and clean, at times slightly coated, seldom dry and thickly coated. The *thirst* is excessive, and accompanied by burning pains in the throat. The appetite is usually not affected. There is constant distress in the *præcordial region* and dyspnœa; the *bowels* are constipated, and the *urine* is scanty, dark colored, cloudy, and frequently contains sugar, but no albumen. The *temperature* usually rises to 100.4° F., seldom to 105 or 106° F. The *skin* is generally moist, and even covered with perspiration. During the paroxysms the extremities are cool and livid. After this paroxysmal stage, which may last from one and a half to three days, follows

The third stage, or the stage of *paralysis*, into which the patient sinks gradually, if he be not carried off suddenly during a hydrophobic paroxysm. Then the convulsions become more feeble and cease entirely; the muscles still continue to twitch; the pupils are contracted, or are of unequal size; the eyes are fixed, and strabismus frequently appears; "the saliva is no longer ejected, but runs from the open mouth; the voice becomes harsh and weak, the breathing short and rattling, and the pulse very small, irregular and rapid; the skin is covered with a clammy perspiration." (Bollinger.) In some cases priapism with frequent seminal emissions has been observed.

Towards the last many patients are again enabled to drink without any difficulty, "and this was considered of old to be a sure sign of death. Death itself may take place amid convulsions, or from asphyxia. It may also approach quietly, seldom with symptoms of coma or suffocation." (Bollinger.) This last stage lasts, as a rule. only from two to eighteen hours.

The most prominent *morbid anatomical changes* found on post-mortem examination are: *hyperæmia* of the brain and its membranes, also of the spine and its membranes, of the lungs, and of the kidneys. The sinuses and peripheral veins are generally distended with dark colored blood, only slightly coagulated.

Upon *microscopic examination*, Klebs found: "In all the swollen portions of the lymphatic system, and particularly in

the submaxillary gland, a deposit of finely granular, strongly refractive corpuscles of a faint brownish color, closely packed together in clusters, at some points in the form of a long row, and at others branching out so as to form large star-shaped figures, following in general the course of the blood-vessels." Whether these corpuscles will prove to be the vehicles for the transfer of the specific infecting material, is as yet undecided.

We can now more easily form an opinion as to the value of the old, but frequently renewed view, that *hydrophobia in man is simply an affection of the nerves, which may be induced by anxiety and excitement;* that it is *a simple myth.* This *imaginary* origin and essence of hydrophobia is sternly rebuked by the sad fact that so many persons, among all nations, succumb to the dreadful malady every year. If these persons were only hysterical women or hypochondriacal men, there might be some show for such an assertion, but the virus if once implanted, spares neither childhood nor age.

That it is *a simple neurosis, a traumatic tetanus,* is contradicted by the fact that hydrophobia has nothing common with traumatic tetanus. According to Rose, these are the diagnostic points of difference between the two: "In *traumatic tetanus* a continuous spasm is present, to which there is finally added an increased reflex excitability; consciousness remains clear until the death-struggle; the organs involved in the act of swallowing are generally unaffected; the tetanic spasm begins in the masseter muscles and in those of the cervical region; the disease is fatal only when it breaks out within a few weeks after the injury. In *rabies,* on the other hand, clonic convulsions occur; reflex convulsions are noticeable from the outset; loss of consciousness often ensues at an early stage; the masseter muscles and those of the neck are not affected by the spasms; the disease makes its appearance after a period of incubation, lasting often for months; its course is uniformly acute; its termination fatal; its prominent feature consists of an affection of the organs involved in the process of deglutition."

The PROGNOSIS is a grave one.

THERAPEUTIC HINTS.—*Prophylaxis.*

"While in cases in which CAUTERIZATION is resorted to, scarcely 33 per cent. of human beings bitten by rabid animals fall victims to the disease; in cases where this operation is not practiced,

exactly 83 per cent. of those bitten encounter certain death." (Bollinger.) Brefeld gives the following direction: "After the wound has first been syringed out with warm water, it is to be gently and thoroughly bathed and cleansed by means of soap-suds and a sponge, or with a solution of potash. The wound is next to be cauterized by means of *caustic potash*, and for several succeeding weeks (from four to six) a suppuration of the cauterized wound is to be kept up; a simple ointment, like resin cerate, being used as a dressing, or compresses saturated with a two-grain solution of potassa. Whenever cicatrization proceeds too rapidly, the cauterization by means of a strong solution of potassa is to be repeated."

"The *application of suction to the wound*, either by the mouth of the sufferer, if the position of the wound permits, or by some other person, *constitutes decidedly one of the most efficient measures, and one that can always be applied upon the spot.*" (Bollinger.) It is self-understood that the lips of the operator should be entirely free from any cracks or wounds. Instead of the mouth, the dry cupping-glass may be applied, where the seat of the wound permits it.

"The best remedy," says Hering, "is *heat applied at a sufficient distance to prevent actual scorching* of the wounded part." Take a hot iron, a live coal, or even a burning cigar, and hold it so near to the wound and its circumference that the patient feels the heat strongly, and continue until he commences to shudder. It is well to apply oil or fat around the wound, and necessary that all moisture which oozes from the wound should be carefully wiped off. This ought to be repeated three or four times daily, for one hour, until the wound has healed.

So may also the *Turkish bath* be of great use.

There are a number of *remedies*, and among them a number of secret preparations used as prophylactics.

Hahnemann recommends **Bellad.** in the smallest dose, at first repeated every third or fourth day, and later at longer intervals. William Gross, Hering, and Hartmann have also recommended it.

Hydrophobin. or **Lyssin** has been introduced by Hering, and its provings show its adaptedness to such cases.

Canthar[15]., has been found effective by Hartlaub and Trinks.

Anagallis arvensis and **Meloe majalis** are popular remedies.

The *developed malady* requires first of all "the removal of every cause of excitement; the separation of the patient from every-

thing calculated to disturb or render him anxious; the maintainance of the utmost quiet; the employment of a friendly tone of address (in place of coercive measures); and the endeavor to calm the sufferer by kind treatment." (Bollinger.)

Bellad., congested face; wild staring look; pupils dilated; sensitiveness to sunlight or shining things; throat sore; spasms of throat; hoarse, barking voice; inability to swallow; oppression; anxiety; hallucinations; biting and snapping; convulsions.

Canthar., when swallowing is prevented by inflammation, and not only from spasms of the throat; spasms follow the pain caused by swallowing; also when there is priapismus. (Hartmann.)

Hydrophobin. or **Lyssin**, when the wound becomes bluish-red, with edges hard and swollen. (Hering.)

Hyosc., general convulsions more prominent than spasms of the throat; does not spit and snap at those around, but abuses them otherwise. Sleep is interrupted as if by a sudden fright, followed by convulsions. After the abuse of Bellad. in massive doses.

Laches., in the worst state of the developed disease it may be better than any other remedy. (Hering.)

Spiræa ulmer., during a frantic paroxysm a patient devoured with eagerness a piece of the root of this plant. One-quarter of an hour after, he became conscious, vomited gall and fell into a profound sleep for 24 hours. He was well afterwards. (Kuhner, in *Med. Journal*, Vol. VII, p. 51, Russia.)

Stramon., Hahnemann says "that according to the totality of the symptoms of a given case, it may be indicated as well as Bellad. or Hyosc." Characteristics appear to be the fear of imaginary objects, and the great mobility and restlessness, with screaming.

THE BLOOD.

This being *the* fluid which nourishes all parts of the system, which sustains respiration, which, in short, is the life of the body, must necessarily cause great disturbances of the body when it becomes in any way abnormally changed. The blood consists of *corpuscles* and *serum*. The corpuscles are of two kinds—*red*, and *colorless* or *white*. The serum contains *water*, *fibrin*, *albumen*, *salts*, *fatty substances* and *extractive matters*.

Any of these *constituents* may be abnormally increased, decreased, or altered, causing an abnormal condition in the *quality* of the blood.

The whole mass of the blood may be increased or decreased, causing an abnormal *quantity*. Obnoxious substances, like sugar, uric acid, oxalic acid, ammonia, sulphuretted hydrogen, urates, gall, pus, may be mixed with, and thus may impregnate, the blood, causing a *poisoned state* of the whole fluid.

It is only within the last ten or twenty years that these different changes of the blood have been made the subject of closer examination, and much of it requires still closer investigation. I shall, therefore, confine myself to the most important facts which these researches have brought to light.

1. Cyanosis.

The blood-corpuscles absorb the oxygen, with which they come in contact during their course through the lungs. Any cause which prevents this absorption of oxygen by the blood-corpuscles hinders the transformation of the *venous* into *arterial* blood. This is the nature of *cyanosis*. It consists in a decreased absorption of oxygen by the blood-corpuscles. Its CAUSES are numerous, and may be arranged under the following heads:

1. *Imperfect respiration*, in consequence of spasms, or œdema, or croupous inflammation of the glottis and larynx; or in consequence of obstructions within the trachea and bronchial tubes, caused by spasms, mucus, blood, foreign bodies, false-membranes: or in consequence of obstacles which prevent the air from entering the air-cells of the lungs, caused by infiltration, hepatization, exudation (emphysema, hydrothorax, pneumothorax); or in consequence of paralytic affections of the respiratory muscles and diseases of the abdomen, by which the lungs become compressed; enlargement of the abdominal organs, tympanites, ascites, etc.

2. *Imperfect circulation*, in consequence of heart disease, obstructions within the pulmonary vessels, obliteration of the pulmonary tissue and blood-vessels, immediate transmission of the venous blood into the left ventricle, in consequence of the non-closure at birth of the foramen ovale.

3. *Inhalation of air*, which contains too little oyxgen, and is impregnated with irrespirable gases, like carbonic acid gas, etc.

4. *Inability of the blood-corpuscles to absorb oxygen.* This has been observed in some severe illnesses, such as typhus, pyæmia, and in the last stage of pulmonary tuberculosis; *cholera.*

Symptoms.—*Bluishness* of the surface of the body, especially of the face and lips; *coldness* of the extremities and depression of the muscular and nervous system; sopor; in a still higher degree, asphyxia.

Cyanosis is, therefore, not a disease in itself, but a mere consequence and symptom of other derangements; still as a symptom it has, nevertheless, some therapeutic value, suggesting Acon., Amm. carb, Arnica, Arsen., **Camphora**, Carb. veg., Conium, **Cuprum**, **Digit.**, **Laches.**, **Opium**, Pulsat., Rhus tox., Sambuc., Sec. carb., Veratr.

In new-born children, where the foramen ovale has not closed, **Laches.**

2. Dissolution of the Red Blood-Corpuscles.

Each blood-corpuscle lives a certain period of time, and after that it dissolves and disappears and new ones form in its place. Thus a constant rotation between life and death goes on in these minute bodies in order to sustain the life of the whole body. In disease, however, this equilibrium is sometimes destroyed; more corpuscles die than are generated, and this causes a state of the blood which is called **Oligocythæmia.** It is characterized by weak-

ness of the muscular system, tired feeling all over; nervousness, palpitation of the heart, bellows-sounds of the heart and large arteries; murmur in the jugular veins.

In still other cases the dissolution of the blood-corpuscles goes on so rapidly and to such an extent that the blood-serum becomes overloaded with the constituents of the destroyed corpuscles, and is thus discolored. Even the excretions of the body assume a bloody or dark appearance; and the exudations are of a brownish, or still darker hue. The skin and mucous membranes become tinctured with hæmatin (the coloring matter of the blood), and color it yellowish, which may be mistaken for jaundice.

If such a profuse dissolution of blood-corpuscles is confined to a certain portion of the circulation, it constitutes an essential part in what is called **Local Gangrene.** A general putrid dissolution through the whole system is **General Gangrene, Septicæmia.** We find such states of general dissolution in some forms of typhus, scurvy, puerperal fevers, yellow fever, and various other forms of tropical fevers. By what it is caused, we do not know.

Compare Alum. P. S., Arsen., Carb. veg., China, Laches., Nitr. ac., Secale.

3. Leukæmia.

"The number of the colorless cells is so much increased that the blood has a whitish color," that is, under the microscope. Virchow thought, by finding this state of the blood in some cases, he had discovered a new disease. And as, according to his observations, the predominance of the white corpuscles appeared in connection with enlargement of the spleen and tumors of the lymphatic glands, he distinguished two forms of leukæmia, the *splenic* and the *lymphatic.* To this has recently been added a third form, Neumann's *myelogenous leukæmia,* which is presumed to have its starting point in the bony marrow.

The patients complain, long before any increase of the white cells in the blood can be discovered, of prostration, dislike to work, dull pains in the splenic region, headache, dizziness, ringing in ears, palpitation, shortness of breath, enlargement of the lymphatic glands in various parts of the body, but especially in the cervical, jugular, axillar, and inguinal regions. However, there are cases of considerable tumors of the spleen and lymphatic glands without leukæmia.

This "new" disease of Virchow has been well known and studied in all its features (except the accumulation of the white blood-corpuscles), by the older physicians, under the name of **Sycosis**, who considered it as the effect of a contamination with gonorrhœal poison, while Virchow and his followers saw the cause in the surplus of white cells—without explaining the cause of this accumulation, which, as stated before, is often not present until at a late period of the disease. Thus, instead of having discovered a new disease, Virchow has found merely a new symptom of an old disease. Compare Von Grauvogl upon this subject in his great work, "Lehrbuch der Homœopathie."

THERAPEUTIC HINTS.—Grauvogl recommends **Natr. sulph.** and **Thuja** as the main remedies.

Other remedies, however, especially those of the hydrogenoid order, may likewise be indicated by special symptoms, such remedies are: Natr. nitr., Natr. carb., Natr. acet., Kali nitr., Calc. carb., Magn. carb. and phosph., Silic., Iodium, Bromium, Chlor., Nitr. ac., Natr. mur., Borax, Antimon., Alum., Carbo veg., Arnica, Aranea diad., Pulsat., Nux vom., Ipec., Arsen., Conium, Apis, Spigel., and animal food.

4. Hydræmia

Consists in a decrease of albumen and an increase of water in the serum sanguinis. In consequence of this the serum is much more prone to exudation than in its normal state, and we therefore find this state of the blood frequently associated with *dropsical effusions.*

Its CAUSES may be:—

1. *Long-continued pathological secretions of clear albumen, or albuminous substances* (mucus, milk, etc.); in consequence of albuminuria, serous diarrhœa, pus-formation, exudation, loss of blood, mucous discharges, too copious flow of milk, too long-continued nursing.

2. *Insufficient supply of nutriment or disturbed nutrition,* so that the received nourishment is not converted into albumen and assimilated. Hydræmia is therefore found in connection with the most different morbid processes. We find it in combination with diseases of the heart and lungs, especially tuberculosis, chronic indigestion, protracted intermitting fevers, Bright's disease, etc.

THERAPEUTIC HINTS must be referred to the above-named morbid conditions.

5. Plethora.

The quantity of the blood must always be estimated as a relative mass. We cannot say, so much is just enough, one ounce more is too much. And in fact during life we have no means for such estimation. The whole plethoric theory therefore rests rather upon a weak foundation. On the other hand, if we observe different individuals, it seems clear enough that some are richer in this vital fluid than others. And as objective signs, which indicate such repletion, are stated: 1. *A higher degree of redness of the body*—such higher color, however, may be often very fallacious; it is of any account only when it is perpetually so; and, 2. *The greater fulness and repletion of the circulatory vessels*, arteries and veins. This is plethora of olden times. More recent observers have split this theory into three branches.

They divide plethora of old into—

1. **Plethora vera**, *true plethora*, which is said to characterize itself by fulness of the arteries and veins, repletion of single organs, florid complexion and increased temperature of the body.

2. **Serous plethora**, an increase of blood-serum, and decrease of corpuscles, which characterizes itself by fulness of the arteries and veins, paleness, or else quick change of color; and,

3. **Plethora ad vasa**, or *false plethora*, which is not too much blood in general, but too great an afflux of blood into the blood-vessels, as in fevers, in consequence of bodily and mental exertions, spirituous, irritating drugs, etc.

All these distinctions are of little use for Homœopathic practice, as the Homœopathic physician will scarcely have occasion to trouble his brain with the question: Shall I bleed? or shall I not?

6. Anæmia, Oligæmia.

The first denotes a *want*, the latter a poorness of the blood; the exact pathological meaning is a diminution of plasmatic albuminates, of red corpuscles and of water in the blood; changes in quality and quantity of other blood-constituents are of minor consideration.

A *sudden* loss of blood by hæmorrhage (internal or from wounds), although producing a state of anæmia, and in consequence thereof, perhaps general epileptiform convulsions, loss of consciousness, delirium, hiccough, retching, vomiting and death, does not exactly belong here. We mean to consider the subacute and chronic forms of anæmia, the CAUSES of which are exceedingly various. They may consist of: deficient supply of food, a want of light and air, too little or too much exercise, too high or too low temperature, excessive losses of semen, too long continued lactation, profuse menstruation, great care or grief, or mental overwork, albuminuria, blenorrhœas of the different mucous membranes, diarrhœa and dysentery, extensive suppurations, large effusions in the pericardial, pleural or peritoneal cavities, infiltrations into the lung tissues, malignant growths, malarial infections, mineral poisonings (acids, phosphorus, etc.), animal parasites, especially the anchylostomum duodenale (compare the chapter on Intestinal Worms), indigestion, diseases of the spleen, lymphatic glands, etc., and fever.

The SYMPTOMS of anæmia are: paleness of the skin and mucous membranes, dropsical effusions in consequence of the diminished albumen in the blood, emaciation, marasmus or general atrophy of the tissues, a tendency to degenerative processes and hæmorrhages, and a decrease of the normal temperature down to 95° F., and lower; muscular exhaustion, irritable weakness, anæmic murmurs over the region of the heart, and the "Nonnengeraüsch" or "bruit de diable," a continuous humming sound over the internal jugular veins, dyspnœa.

The DURATION and PROGNOSIS of anæmia depends altogether upon its causes to which it owes its origin.

Progressive Pernicious Anæmia,

Also known under the names of *essential malignant* and *essential febrile anæmia*, includes those cases of extreme anæmia which tend uninterruptedly towards a fatal issue, and of which no adequate cause can be discovered, either in the patients' circumstances or in the previous state of their constitution. Its pathogeny and causes are shrouded in utter obscurity. It attacks most frequently women from the age of twenty to that of forty, and the cases described and classed under this new term by Biermer and Gusserow have principally been observed in Switzerland. Most cases were those of pregnant women.

The SYMPTOMS begin insiduously with a gradual *paling* of the skin and mucous membrane, increasing to a degree as found in acute anæmia from hæmorrhage. A *wasting* of the tissues (marasmus) is usually not observed until fever sets in, but other symptoms of anæmia associate early with the increasing paleness. Such are: *palpitation* of the heart; a loud, *blowing, systolic murmur* and *purring tremor* over the heart, and the *venous hum* in the jugular veins, characterized by great constancy and intensity; *irritable weakness* and great *prostration* with severe *fainting fits* from slightest exertion; *dyspnœa*, is hardly able to speak above her breath; *effusion* into the pericardium and pleura, and puffiness of the legs; *hæmorrhages* from different parts of the body: the nose, gums, genital organs in women, and the skin in the form of petechiæ and occasionally as large patches of ecchymosis; hæmorrhages in the retina and other internal parts. The *fever* is of an irregular type, with temporary exacerbations, when the temperature may run up to 104° F. As the end approaches it is prone to fall suddenly as low as 95° or even 93.2° F. When occurring during pregnancy, it usually induces premature labor, and this is the forerunner of death.

With all these severe symptoms, PHYSICAL EXAMINATION shows no organic disease of the heart, nor of the kidneys (no albuminuria), nor of the spleen, liver or lymphatic glands, and microscopic examination reveals no disproportion in the relative number of red corpuscles and leucocytes, thus distinguishing this disease thoroughly from *leukæmia*. From *chlorosis* it differs by its dropsical symptoms and its hæmorrhagic diathesis, and from other forms of *anæmia* by its fever.

The duration of the disease is seldom less than six or eight weeks, and seldom more than the same number of months. "Our present experience justifies us in regarding every case as tending inevitably to a lethal issue." (Immermann.)

THERAPEUTIC HINTS.—In any case of anæmia we must, above all things, well weigh its cause or causes, which see above. As a mere symptom anæmia may hint to the one or the other of the following remedies: Arsen., Calc. carb., Carb. veg., China, Cuprum, Ferrum, Helon., Hydrast., Kali carb., Natr. mur., Nux vom., Sulphur, Veratr. and many more.

7. Chlorosis.

According to the latest researches chlorosis seems to be characterized by a diminution in the amount of hæmoglobin in the blood; the change appears to be strictly limited to the red corpuscles. But whether this change consists in a diminution of their number, or of the proportion of coloring matter contained in the individual corpuscles, is not yet decided. The albuminates and leucocytes seem not to be affected, and this is an important pathological distinction between it and anæmia, in which latter there is always a decrease of the plasmatic albuminates.

The disease is almost entirely limited to the female sex, between the fourteenth and twenty-fourth years of life; it is especially, therefore, a disease of the age of female puberty, seems often to grow upon a hereditary disposition, a peculiar constitutional habit of the body, and may be excited by conditions incidental to modern social life, or atmospheric and telluric influences, or by emotional disturbances, such as terror, anxiety, disappointed love, homesickness and the like.

Its Symtoms are manifold:

1. *Color of the skin.* A conspicuous paleness, sometimes clear, sometimes yellowish, greenish, waxy. Even the lips and other mucous membranes appear pale; dark rings around the eyes. In some cases there is œdema of the feet, face and eyelids; temperature decreased; breath cool; lips, nose, ears, hands and feet cold. The patient is sensitive to cold, seeks a warm room.

2. *Circulation.* The pulse is usually small and compressible, varying in frequency, easily excited by any trifling cause. The heart's impulse varies likewise in frequency and in intensity, amounting often to strong palpitations. Sometimes the palpitation of the heart becomes habitual and is one of the most prominent, and, at the same time, most annoying symptoms. Physical signs are those of anæmia: systolic murmurs over the apex of the heart, and humming sounds over the jugular veins. The latter are the most constant.

3. *Respiration* is frequently dyspnœic, especially after any exertion; the patients sigh and cough occasionally.

4. *Muscular system.* Great weakness; easily tired and exhausted.

5. *Nervous system.* Dizziness; headache; noise in the ears, especially in the right ear; pains in different parts of the body, especially in the stomach and back; even hysterical spasms; sad-

ness; want of energy; frightful dreams; nightmare; melancholy, and even mania, and inclination to self-destruction.

6. *Digestion.* Want of appetite; digestion slow; sour and foul eructations; desire for sour things; morbid desire for chalk, paper, ashes, coals, even excrements. Often the most undigestible things—pork, beans, pastry, etc.—suit better than light soups, meat, etc. However, these digestive symptoms are, in some chlorotic persons, entirely wanting.

7. *Genital sphere.* There is generally amenorrhœa or irregular menstruation with pain; thin, watery leucorrhœa in place of the menses, or in some cases menorrhagia.

Chlorosis is often combined with *hysteria* and choreic paroxysms; also Basedow's or Grave's disease stands in undoubted connection with it; and other neuroses, such as cardialgia, headache, toothache, backache, etc., are found as frequently in chlorosis as in anæmia.

Its DURATION is variable; under proper treatment it may yield in a comparatively short time; otherwise it may last for years. Marriage sometimes relieves at once. Complications, such as acute febrile disease, phthisis, endocarditis, gastric ulcer, etc., of course change its favorable prognosis.

THERAPEUTIC HINTS.—**Ant. crud.**, menses commence at an early period, are profuse and cease afterwards; great deal of headache; peevishness; loss of appetite; irregular stool; excessive laziness and weakness; must lie down for hours; deep and unrefreshing sleep at night.

Arsen., trembling; frequent fainting; excessive debility; pernicious anæmia.

Bellad., laziness and indisposition to work or stir, great general debility, with weariness and a desire to sleep in the afternoon; shortness of breath; extreme paleness of the face changes instantaneously to redness, with cold cheeks and hot forehead.

Bryon., all the symptoms worse from the slightest motion.

Calc. carb., scrofulous diathesis; disposition to colds and diarrhœa; great weakness or curvature of the spine; vertigo, especially on going up stairs; disgust for meat; craving for sour and even indigestible things (chalk, coal, etc.); after eating, swelling of the stomach and palpitation of the heart; menses sometimes too often and too profuse, or wanting; leucorrhœa; great shortness of breath; great weakness of the muscles; walking wearies

and makes the heart palpitate; sitting causes severe backache and headache; therefore constant inclination to lie down; hands and feet are cold; the fingers sometimes appear dead. The mind is generally full of concern about imaginary things that might happen to her.

Carb. veg., when complicated with itch and fluor albus; gums swollen, scorbutic and receding from the teeth; the teeth are loose; feels wretched all over; can scarcely walk.

China, in such cases as result from loss of vital fluids, menstrual or vicarious bleeding, suppurations, etc.; or which set in after severe and protracted illness, such as intermittent fevers, typhus, cholera, etc.; showing in either case a tendency to dropsical effusions and œdematous swellings. Besides we observe sour belching, poor digestion, bloated abdomen.

Cina, on drinking wine she shudders as though it were vinegar; spasmodic yawning; headache, pain in the chest and back, caused by fixing the eyes steadily upon some object, as, for example, when sewing; all these pains are aggravated by external pressure; spells of intermittent fever every afternoon at four o'clock, with thirst and coldness of the hands and feet; colic and vomiting of ingesta; afterwards heat and sweat, followed by deep sleep.

Conium, menses wanting; genitals very sensitive; constant dry heat all over, without thirst; stitching pain in the region of the liver, and heaviness in the limbs; weeping mood; restlessness; great concern about any little thing that may happen; anxious dreams.

Cuprum, disposition to laryngeal and tracheal affections, to vomiting and purging; sweating of feet; torpid cases. (v. Grauvogl.)

Cyclam., suppressed menses; or scanty, painful menstruation; headache; vertigo; swollen eyelids; pale face, lips and gums; loss of appetite; no thirst; constipation; palpitation of the heart; constant chilliness; *dread of fresh air;* disinclination to move and to work; constant drowsiness; wants to be alone, and weeping does her good. Is very similar to Pulsat., differing, however, from it, by its dread and disinclination for fresh air.

Ferrum, anæmia, characterized by great paleness of all the mucous membranes, especially that of the cavity of the mouth, by the bellows-sound of the heart and anæmic murmur of the arteries and veins; by great paleness of the face, which, however, is very apt to suddenly become fiery red, with vertigo; ringing in the

ears; great palpitation of the heart and dyspnœa; thus showing a disposition to congestion and fluxion of blood to these parts of the body. All the muscles are feeble and easily exhausted from slight exertion; there is frequent vomiting of ingesta, especially after eating, and from motion; cardialgia; the menses are either suppressed or watery; we observe general emaciation; œdematous swelling of the body; cool skin; constant chilliness and evening fever, similating very closely hectic fever.—*Florid cases*, with disposition to phthisis, hæmoptysis, menorrhœa, scrofulous inflammation of eyes, diarrhœa, ascarites, etc. (v. Grauvogl.)

Graphit., scanty, pale, delaying menses, or they do not appear at all; cool vagina; aversion to coitus; œdema of the eyelids, external genital organs and abdominal parietes, leaving on pressure the imprint of the finger; face pale and yellowish.

Ignat., sensitive, nervous, hysteric women, who are inclined to spasmodic and intermitting complaints, and where the trouble is induced by mental emotions, such as fright, grief, disappointed love, etc.

Ipec., headache, as though the brain were mashed, with nausea and vomiting; miliary eruptions on the forehead and cheeks by spells; pale face and pale mucous membranes; weak pulse; cold hands; morose, enjoys nothing.

Natr. mur., in chronic cases and cachectic individuals, with dead, dirty, withered skin; frequent palpitation and fluttering of the heart; suppressed menstruation; leucorrhœa; diminished sexual desire; oppression and anxiety of the chest; sadness.

Nux vom., especially in those cases in which the functions of the stomach, intestines and liver are principally affected, and we may observe a train of symptoms like the following: irritable, angry disposition; great anxious concern about little things; headache, with bilious or sour vomiting, worse in the morning; pale, earthy face; feeling badly after eating bread or sour things; sour taste in the mouth; craving for chalk; nausea and vomiting in the morning or after eating; cardialgia, with wind in the stomach; better from drinking something hot; obstinate constipation; running of the nose through the day, and stoppage of it at night; sore feeling all over in bed in the morning; dreads motion and fresh air; gets awake early in the morning, then dozes again and wakes up finally, feeling much worse than at any other time.

Phosphor., in deep-seated, chronic cases, with tubercular diathe-

sis; brought on by depressing mental influences, such as grief, worriment, disappointed love, or by exhausting bodily causes, such as night-watching, loss of blood, diarrhœa, night-sweats, onanism, etc. We observe, in such cases, puffiness around the eyes, dry, hacking cough, great weakness in the sexual organs, consequent upon previous irritation of these parts; leucorrhœa of a whitish, watery slime, especially profuse during the time of the menses, sometimes acrid and corroding; a total loss of energy in all the organic functions of the body.

Plumbum, want of breath and great oppression of the chest from motion; palpitation of the heart; obstinate constipation; œdema of the feet and anasarca; great muscular weakness.

Pulsat., great weakness and sluggishness in the circulation, manifesting itself in constant chilliness, coldness and paleness of the skin and face, with hot flashes and transitory redness of cheeks; soft, irregular pulse and palpitation of the heart, oppression of the chest and shortness of breath; disinclination to move and a sad and tearful disposition; the appetite is generally absent, and there is no thirst; the whole digestion is disturbed, and consequently the assimilation of nutriments for the blood does not take place properly. We observe, therefore, signs of anæmia, such as dizzness, especially when rising, and amenorrhœa, or scanty, slimy menses, which appear too late; in general the patient feels better in the open air. This distinguishes Pulsat. from Cyclam. It is frequently indicated after Calc. carb., Ignat., Sepia or Sulphur, and is followed well by Ferrum. Disposition to intermittents, melancholia, hysteria, heart and kidney diseases, discharge from ears. (v. Grauvogl.)

Sabina, amenorrhœa; frontal headache, pressing down upon eyes, worse in morning on rising, better in fresh air; blue rings around eyes; nausea and qualmishness when in a crowd; burning in pit of stomach, with twisting and gurgling in bowels; bearing down; drawing pain in extremities, worse at night; lassitude and sleepiness. (Watzke.)

Sepia, bearing-down as if everything would issue out of the genitals; prolapsus uteri and vagina; brown-reddish color of the vagina; diphtheritic ulcers in the vagina and on the labia; leucorrhœa, yellowish and passing away in starts; swelling of the external genital organs, with itching, burning and soreness; stitching pains in the ovarian region; palpitation of the heart; intermitting pulsation; occasionally a hard thump of the heart;

frequent sickness at the stomach, brought on even by the smell of cooking. Uneasiness in the presence of strangers; sudden flushes; starting at trifles; tongue coated, most at root, clearing off in patches, leaving red surface; no menstruation.

Sulphur, heat of the head with cold feet; inclination to religious reveries; inflammation of the eyelids; frequent, unsuccessful desire for stool; leucorrhœa; oppression of the chest with palpitation of the heart; exhaustion even from talking; feels worse while standing; cutaneous eruptions; sleepy in the daytime, restless at night; perspires easily; feels faint before dinner. Is often necessary as a foundation for the better action of other remedies.

Besides compare: Alet. far., Alum., Helon., Senecio aur.

8. Scurvy, Scorbutus.

This disease belongs to the general disorders of nutrition and is characterized by an intense general cachexia in connection with various local eruptions, and disorders of a hæmorrhagic and hæmorrhagico-inflammatory character, most constantly observed in the gums.

The occurrence of scurvy so extraordinarily frequent in the middle ages, has become much less frequent in our times; but it is still occasionally observed on the land in times of famine, in places undergoing siege, in poorly ventilated dwellings, and in cold and damp regions and seasons; on the sea during long voyages upon sailing vessels, and especially when a gloomy and anxious state of mind, and poor food enter this combination of circumstances. As regards food there is no doubt, that a deficiency of fresh meat and vegetables, especially potatoes and greens, induces the disease in many cases. And because these articles of diet contain a greater percentage of potash, than salt meat, dried beans and the like, some authors have unreservedly laid the cause of scurvy in a deficiency of potash in the food. This, however, is obviously wrong, since many outbreaks of scurvy are recorded where there was no lack of these articles. Hence, it can also be seen that a mere dietetic treatment will not always suffice for a cure. But there are still other conditions mentioned under which scurvy has been seen to develop, namely: convalescence from typhus and acute exanthemata, surgical diseases, especially in military hospitals, and the dwelling together

of old people in beneficiary hospitals. Its onset is usually insidious and its course lingering. We observe at first a general debility, lassitude, sleepiness and depression of spirits; a sad-looking, pale, cachectic face, with blue rings around the eyes; loss of appetite, except perhaps in some cases a craving for fresh, green or sour things; the stool is slow, the urine scanty and the skin dry. With all this there are aching pains, especially in the popliteal space, with circumscribed hardness and a slight bluish color. After a few days the gums become swollen, spongy and bluish; they bleed at the slightest touch. There is a bad taste in the mouth and a fetid breath. The general debility increases; ecchymosed spots appear on the skin; first on the legs, later all over the body, from the size of a lentil to that of a half-dollar and larger, at first looking purple, in severe cases black, later changing into all the different hues which extravasated blood undergoes; frequent nosebleed. All these symptoms may reach a still higher degree; the weakness may augment to prostration, so that even the slightest exertion or motion may cause fainting; the gums may issue a fetid, ichorous, bloody fluid; the ecchymosed spots may change into blisters, filled with ichorous fluid and forming ulcers.

The pain in the extremities may grow still severer, and the joints and bones may swell; effusions of fibrin beneath the skin may harden the legs like boards. The hard stools may change into a thin, ichorous and bloody diarrhœa, with colicky pains. The spleen is usually enlarged. Epistaxis increases, and there are even bloody secretions from the conjunctiva, respiratory organs, stomach (by vomiting), and from the urinary organs, in the form of bloody urine.

If to all these symptoms be added extravasation of bloody serum into the pleura, the pericardium, the lungs, the brain or its membranes, the patient generally dies, either suddenly or gradually, in consequence of increasing prostration and hectic fever. Of course, all cases do not terminate thus. Its duration, however, is long, lasting months, and convalescence is very slow, if left to nature.

THERAPEUTIC HINTS.—Special cases which have been brought on by a deficiency of certain articles of food should certainly be supplied with these articles, as a matter of course, where it can be done. In other cases which owe their origin to other causes, the mere feeding with greens and acids will certainly be of no avail. We shall have to look again for help to the law of similars.

Agave Americana, countenance pale and dejected; gums swollen and bleeding; left leg, from ankle to groin, covered with dark purple blotches; leg swollen, painful, and of stony hardness; pulse small and feeble; appetite poor; bowels constipated.

Amm. carb., hectic fever, profuse hæmorrhages from the intestines, nose and gums; falling out of the teeth; muscles soft and flabby; emaciation.

Arsen., the gums bleed readily; fetid smell from the mouth; violent thirst, which obliges him to drink frequently, although but little at a time; offensive diarrhœa; excessive debility; stiffness and immobility of the knees and feet, with violent tearing pains, worse about midnight, better from external warm applications; great despondency and restlessness.

Canthar., pains in the gums; coagulated blood in the mouth, early in the morning, in bed; bloody urine.

Carb. veg., swelling, receding, and bleeding of the gums; nosebleed; readily bleeding ulcers; general physical depression; attacks of sudden weakness, like fainting; after too much salty food.

China, inertia; excessive debility; hæmorrhage from the mouth, nose, and intestines; great desire for sour things; diarrhœa.

Hydrast., physical prostration; fainty, weak feeling; ulcers on the legs.

Kali phosph., easily bleeding gums; putrid decomposition; prostration.

Mercur., spongy, bleeding gums, of a sickly appearance; they look white along the upper border and recede from the teeth; bluish color of the inner cheeks; fetid smell from the mouth. Sinking with an indescribable malaise of body and soul, obliging him to lie down; fetid ulcers on the legs, which speedily become putrid; spongy, bluish, readily bleeding ulcers.

Mur. ac., swelling of the gums; scorbutic gums.

Natr. mur., scorbutic, putrid inflammation of the gums; bloody saliva; difficulty of talking, as if the organs of speech were weak.

Nitr. ac., swelling and bleeding of the gums; the teeth are loose; bloody saliva; putrid smell from the mouth; after abuse of mercury.

Nux vom., putrid bleeding; swelling of the gums; putrid ulcers in the mouth; cadaverous smell from the mouth; bloody saliva; spitting of blackish, coagulated blood, and blowing blood from the nose; pain in the limbs; great weariness and languor.

Phosphor., the gums bleed easily and stand off from the teeth; sore, excoriated spots on the skin; ecchymosed spots.

Staphis., the gums are painful to touch and bleed easily on being touched; scorbutic ulcers.

Sulphur, swelling of the gums, with throbbing pain in them; bleeding; fetid smell from the mouth; sleeplessness at night; desire for brandy.

Besides, compare Cistus can., Crotal., Hepar, Kreosot., Sepia, Sulph. ac., Terebinth.

9. Purpura Hæmorrhagica, Morbus Maculosus Werlhofii.

This is a transitory *hæmorrhagic diathesis* of sporadic occurrence and a relatively brief duration, the etiology of which is entirely unknown; its development appears spontaneous.

In this apparent spontaneity of its occurrence, without regard to age, previous health, or inherited predisposition of the individual attacked, it differs from hæmophilia, scurvy and symptomatic tendency to bleeding, which is frequently observed as a consecutive or accompanying symptom of certain severe and acute or chronic diseases, such as variola, typhus exanthematicus, phosphorus-poisoning, leukæmia, pernicious anæmia, protracted icterus, etc.

It often begins suddenly, without prodromal warnings, with petechiæ upon the skin or epistaxis; at other times its outbreak is preceded, for several days, by languor, headache, loss of appetite and even moderate fever. In still other cases it commences with rheumatic pains in the lower extremities, especially the knees and ankles, when it has been called **Purpura rheumatica** or **Peliosis rheumatica.** (Schoenlein.)

The hæmorrhagic exanthem may extend over the entire body, and the individual spots vary greatly in size, from that of a pin-head to that of a lentil, a pea or a bean. The larger ecchymoses are rare, and assume every possible shape. These maculæ are often interspersed with more or less numerous vesicles, which are evidently produced by circumscribed hæmorrhages into the rete Malpighi from capillary loops of the papillæ of the skin. The *color* of the maculæ, when fresh, is dark bluish-red; later it changes successively to greenish-blue, brown and yellow. Pressure does not alter the appearance. It is exceedingly common for *fresh crops* to appear at varying intervals during the disease,

which brings about the various colors of the different ages of these maculæ.

As long as the disease manifests itself as a mere cutaneous eruption, it is called **Purpura simplex**; when, however, it is attended by hæmorrhages in other parts, it is called **Purpura hæmorrhagica.** Such hæmorrhages may take place from the mucous membrane of the nose, mouth, stomach, intestines, urinary passages, genitals in women, and bronchi; they are much more common in morbus maculosus than even in severe cases of scurvy; but the bluish-red discoloration, the softening, swelling and spongy character of the gums, and the excessive sensitiveness of these parts, which is characteristic of scurvy, are entirely wanting. Hæmorrhages occur exceptionally also within the serous cavities, in the meninges and in the substance of the brain. Simple cases pass over in a week or two; repeated and profuse hæmorrhages may induce anæmic pallor, dropsical swellings, extreme weakness, fainting fits, etc.

THERAPEUTIC HINTS.—Compare, as the most important remedies, **Crotal., Phosphor., Ledum, Bryon., Hamam., Secale,** Arnica, Arsen., Ferr. phosph., Laches., Sulph. ac.; and in cases of Epistaxis, Hæmatemesis, or Hæmaturia, the corresponding chapters.

10. Hæmophilia, Hæmorrhophilia.

By this name is meant a congenital hæmorrhagic diathesis, in consequence of which even the slightest wounds, no matter where, always bleed very profusely. The cause is unexplainable; we only know that this tendency to bleed exists in certain families, and is propagated to three or four generations; sometimes leaping over one link and appearing again in the following. The female members of such families are generally, although not always, exempt, but they are very apt to propagate this tendency to their male children.

There are no objective signs by which this diathesis could be recognized before the bleeding sets in. Such persons, however, are described as having blonde or reddish hair, a very fair skin, with the blood-vessels shining through, and blue eyes. In some cases it shows itself immediately after birth, as an uncontrollable bleeding of the navel; oftener during the first or second dentition, and in other cases still later. Then the blood oozes unin-

terruptedly from the slightest wound, as out of a sponge, until the patient becomes exhausted from loss of blood. Mere bruises cause large effusions of blood into the cutaneous and subcutaneous tissues. Spontaneous bleedings from the nose, which are by far the most frequent, or from the lungs, stomach, intestines, or kidneys, do not take place until after several bleedings from external wounds. Such spontaneous internal hæmorrhages are mostly preceded by palpitation of the heart, oppression, congestion to the head, pain in the limbs, and, in some cases, by painful swellings of the knee and ankle-joints. Bleeders seldom reach an old age; in some cases, however, this tendency to bleed gradually diminishes with the advancing years, and ceases entirely at last.

THERAPEUTIC HINTS.—It seems that **Phosphor.** must be the main remedy. Compare likewise **Secale**, and for internal bleedings those chapters which treat of the corresponding hæmorrhages. **Eriger.** is said to be very efficacious; also: **Natr. sulph., Crocus, China, Arsen., Hamam.**

11. Scrofulosis.

We understand by this term a cachexia which manifests itself as a nutritive disturbance in the external skin, the mucous membranes, joints, bones, organs of sense, and, above all, in the lymphatic glands, in such a manner that individuals thus affected betray the internal disorder by a peculiar *habitus*. According as the faulty nutrition leads either to an accumulation of fatty deposits in certain parts of the body, or to a deficiency in fat on account of too rapid growth, scrofulosis has been divided into a *torpid* and an *erethic form*. The habitus of the first Canstatt portraits in the following manner: "uncommonly large head; coarse features; thick, swollen nose and upper lip; broad cheek-bones; large belly; swollen glands on the neck; soft, flabby muscles." The erethic form he characterizes as follows: "conspicuous white skin, which reddens easily, and through which the blood-vessels shine forth; red lips and cheeks; bluish color of the sclerotica, which gives to the eyes an expression of languor; the muscles of such individuals are thin and flabby; the weight of the body does not correspond with their size, showing a want of solidity of the bones; their teeth are fair, bluish, glistening, long and nar-

row, and their hair is soft." The majority of cases, however, lies between these two extremes, or represent a mixture of the characters of both, as it happens with all such classifications.

The special changes in the *skin* are *eruptions*, which usually have their seat in the face and on the scalp, and they consist of a superficial dermatitis, with exudation of lymph upon the free surface, constituting eczema or impetigo, or, as they are likewise called, tinea or porrigo, etc. Destructive processes, like forms of lupus, do not take place until sometimes at a much later period.

The scrofulous affections of the *mucous membranes* involve most generally by their secretion the adjacent parts of the external skin; thus we find that a scrofulous conjunctivitis, otitis or coryza is generally attended by an eczema either on the cheeks or about the entrance to the ear or on the upper lip. Bronchial and intestinal catarrhs, or catarrhal affections of the urinary or sexual organs of scrofulous individuals are generally of an obstinate character.

The scrofulous affections of the *joints* manifest themselves either as dropsical effusions, or as the so-called white swellings, or even as suppurating processes, constituting caries of the bone-ends and destruction of the capsular ligaments, as found in coxitis, gonarthrocace, etc.

The *bones* themselves are attacked by inflammation of their texture or lining, constituting either osteitis or periostitis, or caries or necrosis, or all combined.

Scrofulous affections of *the organs of sense* manifest themselves in the *eyes*, either as inflammation of the Meibomian glands, or as conjunctivitis or corneitis, which latter not unfrequently leaves behind spots and cicatrices upon that organ; in the *nose*, as obstinate coryza, or, although only in quite rare cases, as lupus; in the *ears*, as otitis, which may terminate even in destruction of the petrous portion of the temporal bone.

The greatest nutritive disturbances are sustained by the *lymphatic glands* of scrofulous individuals. Everywhere, where there is an inflammatory process of the skin or in the mucous membranes, we find the adjacent lymphatic vessels and glands participate in that process. The glands swell and inflame, and the inflammation spreads from the parenchyma of the glands to the surrounding cellular tissue, causing suppuration and abscesses, which are of slow growth and great obstinacy, leaving on healing almost always ugly cicatrices. We find these glandular abscesses most frequently in the cervical region. But the lym-

phatic glands of scrofulous individuals swell also without any inflammation of neighboring organs.

This is almost a pathognomonic sign of scrofulosis. We sometimes find whole convolutes of these glands enormously enlarged. The microscope shows no foreign elements in them; their enlargement consists therefore in a pure hypertrophy of their own cells. When they inflame and suppurate, they form, as above stated, abscesses, which break; in other cases, the puriform matter becomes desiccated into a cheesy mass, and may be finally transformed into a chalky substance, when it appears under the skin as a hard, uneven protruberance. Such chalky masses not unfrequently irritate the adjacent parts, and give rise to troublesome inflammation and suppuration of the glands. The main seat of these glandular swellings is the cervical region, especially behind the ears and under the lower jaws, extending sometimes as far down as the shoulders. But the bronchial and mesenteric glands also are not unfrequently the seat of this nutritive derangement.

Scrofulosis is *inherited* as well as *acquired*. *Inherited* from scrofulous parents; also from parents suffering with tuberculosis, carcinoma or tertiary syphilis; or from parents of advanced age; or, finally, from parents who are too near relatives. Still, it must be observed, that quite a number of children of parents, as described above, are found entirely free of any scrofulous taint, whilst on the other hand congenital scrofulosis is met with in children whose parents belong to none of the above specified descriptions. *Acquired* it may be by poor or faulty diet, or by the want of exercise and fresh air; frequently by the joint action of different unhealthy influences.

Its course is always chronic; sometimes periodically improving, and then growing worse again. Its worst feature is its tendency to make children prone to the worst forms of illness of childhood, such as croup, hydrocephalus and tuberculosis, with which they combine and which they aggravate. Statistics show that most of the victims of these diseases are scrofulous children.

THERAPEUTIC HINTS.—Compare in general, as the most important remedies, Aln. rub., Asaf., Aurum, Badiaga, Baryt. carb., Bellad., Calc. carb., Calc. phosph., Cistus, Conium, Hepar, Iodium, Lycop., Mercur., Natr. mur., Rhus tox., Sepia, Silic., Sulphur.

For special hints, reference is made to the special ailments under their respective heads, and to Goullon's Scrofulous Affections, translated by E. Tietze, M.D.

FEVER.

Fever is characterized by these two points: an increase of temperature of the body and a rapid consumption of bodily substance.

Without an increase in the natural heat of the body, there is no fever. It is necessary, therefore, to know something about—

Clinical Thermometry.

The *normal temperature* in the axilla of a healthy person ranges between 97.25° and 99.5° F.; the mean is 98.6° F. This temperature is nearly the same in all climates, and keeps its standard alike in summer and winter. Its daily oscillations are most marked after meal-times, when there is a slight *rise*. The mean temperature we find a short time before the main meal, its maximum about four hours after the main meal, and its minimum in the night hours.

In order to ascertain the degree of temperature of a person, it is sufficient that the bulb of the instrument be held for five or ten minutes firmly in the hand, or, what is much more preferable with patients, to insert the bulb into the axilla, taking care that it be entirely surrounded by the adjacent parts. This is easily secured by slightly pressing the upper arm against the chest. In this way the instrument is kept in a firm position, and after the lapse of five or ten minutes the quicksilver partakes of the same degree of warmth as the surrounding parts, and its expansion can easily be read on the scale of the instrument.

"A normal temperature does not necessarily indicate health; but all those whose temperature either exceeds or falls short of the normal range, are unhealthy."

"The range of temperature in severe diseases is between 95° F. and 108.5° F., and very seldom falls below 91.4° F., or rises to 109.4° F., though in rare cases it has reached 112.55° F." "Alterations of temperature may be confined to special regions, whilst the rest of the body remains almost normal; they seldom exceed 1.8° to 2° F." "A rapid increase in the heat of the body, and decrease of the heat of the extremities, is associated with 'cold shivers, rigors, fever-frost.'"

"A protracted temperature of 101.3° F. or more, is usually accompanied with heat, lassitude, thirst, headache, frequency of pulse; if persisting, with diminution of body-weight, 'pyrexia,' fever, fever-heat." "Any considerable diminution of warmth in the extremities, with very high, or very low central temperature, is expressed by a small pulse, sunken features, weakness, nausea, cold sweating, collapse."

"Temperatures much below 96.8 F. are *'collapse' temperatures.* Below 92.13° F. deep, fatal algide collapse.

92.3 to 95° algide collapse with great danger, still with possibility of recovery.

95 to 96.8° F., moderate collapse, in itself without danger.

99.5° to 100.4°, sub-febrile temperature.

100.4° to 101.12°, slight febrile action.

101.3° to 102.2° in morning, rising to 103.1° in evening, moderate fever.

103.1° in morning and about 104° in evening, considerable fever.

103.1° in morning and above 104.9° in evening, high fever.

107.6° and above indicates a fatal termination, except in relapsing fever; hyperpyretic temperatures."

"There is often a contrast between the temperature and the *frequency of the pulse;* though as a rule, slight febrile heat coincides with a pulse of 80 to 90; moderate fever with 90 to 108; considerable fever with 108 to 120; extreme heat with 120 and upward per minute."

"A pulse rather slow in proportion to the temperature is favorable as indicating a tranquil nervous system. A low pulse with high temperature invites us to look for spinal cause, as pressure on the brain, depressing action of drugs, etc."

"A low temperature and frequent pulse points to local complications in the thorax or pelvis. Not forgetting, however, that moving accelerates the pulse."

"The number of *respirations* per minute does not correspond so closely to the temperature as the frequency of the pulse. In collapse there is often (not always) a frequency of respiration, and in slight fever of childhood also; in moderate fever the respirations amount to 20 or so per minute; in children to 40 or 50. In considerable or extreme degrees of fever they are higher yet, 60 in many cases; movement also increases their frequency. In other cases a quickened respiration indicates local causes." (Medical Thermometry and Human Temperature by Wunderlich and Seguin.)

The temperature in *special diseases* is stated in the corresponding chapters.

Crisis and Critical Days.

Already Hippocrates, in the twenty-fourth aphorism of the second book, teaches in regard to critical days as follows: "Of seven days, it is the fourth that is indicative. With the eighth day begins the second week. The eleventh again must be observed, because it is the fourth day of the second week. So also must be noticed the seventeenth day, as it is the fourth from the fourteenth and the seventh day from the eleventh." And in aphorism thirty-six, in the fourth book, he says: "Such sweats, which occur in fever-patients on the 3d, 5th, 7th, 9th, 11th, 14th, 17th, 21st, 27th, 31st or 34th day, are salutary, because they bring on a favorable turn in the disease. If sweats, however, occur on other days, they denote exhaustion, obstinacy, and relapse of the disease."

These remarks are no doubt the result of a large amount of observation on fever-patients which, having been left to nature, afforded a clear basis for observation. As such, they have been verified up to this day. As the most important of these critical days are acknowledged the 3d, 5th, 7th, 13th and 21st. Why is it that these days should have more importance in the course of a disease than others? Is there any natural connection between these odd numbers and the diseased states of the body? The old school has acknowledged the Hippocratic facts, but has never succeeded in solving the perplexed question. Just as many other things, which belong to the interior vital workings, could not be solved until the higher light of Homœopathy had been made to shine upon the organism, so also had this problem to

wait until Dr. v. Grauvogl caught the seemingly loose and unconnected threads between odd days and certain developments in disease, and showed their legitimate connection by nature's own laws. I shall now try to condense his views on this subject as he has set them forth elaborately in his "Lehrbuch der Homœopathie."

According to physiological experiments it appears that a living organismus, when it is subjected to a starving process, does not lose its bodily substance evenly, but rather periodically, so that its greatest losses always fall upon the fifth, eighth and thirteenth day. Thus the operations in a living organism differ essentially from mere mechanical or chemical operation. If you, for example, expose a vessel with water to an equally dry atmosphere, it will lose its contents by evaporation evenly, just so much an hour. The living organism does not. It regulates its expenditures, or its losses, according to its own laws, which allow its receipts and expenditures to oscillate between a certain boundary, and make its operations to go on in regular periods. These *periodical fluctuations* are, therefore, the law of *normal life*, part and portion of all its evolutions in health and disease, and are not peculiar to states of disease. When, therefore, in *diseases* on the third, fifth, seventh, thirteenth, twenty-first and thirty-fifth day, a greater amount of losses sets in in the form of excretions, such as sweat, flow of urine, diarrhœa, etc., which is called the *crisis*, it is nothing more nor less than the same periodic oscillation which is going on continually in the living organism, and which becomes more conspicuous only in disease, because it is frequently followed by a decided improvement or death.

It necessarily must become more conspicuous, because this periodical loss is added to the extra consumption, which is a condition of the acute disease. If the physical state of the patient be such as to endure both, he, of course, must feel better the next day, when the periodical acme ceases; and he *dies*, if his physical power cannot endure the united action of both.

Thus the critical days of the disease are nothing more nor less than the normal, periodical fluctuations of the living organism, with which they correspond; and the *crisis* is that critical day with its normally increased excretions, which falls together with the height of the disease. These observations are corroborated by the following facts: that the so-called *crisis* does *not* appear when, during the course of a disease, the organism is *weakened*

by improper medication, because then the natural periodic fluctuation is disturbed and destroyed; and it does *not* appear *when, by the application of the proper remedy*, health is restored; because the periodic fluctuation alone is not conspicuous enough to be observed.

It is, however, never wanting when the disease runs an undisturbed course; and, in so far, it is an important means to distinguish between a successful and an unsuccessful treatment. This is the theory of Grauvogl.

It may be proper to add some further conclusions as to the importance of watching the critical days during homœopathic treatment.

1. The right remedy cures a disease without a crisis; and thus we have an indisputable proof that the selected remedy *was the* remedy.

2. Aggravations after a remedy, when they occur on critical days, need not be the result of the remedy, as the conjoined action of the disease and the periodical oscillation alone will cause them naturally.

3. When, after the administration of a homœopathic remedy, a crisis takes place notwithstanding, we may be sure that we did not "hit" the case, and that the patient got well without our aid.

4. When no crisis appears, and the patient gets worse and worse, it is clear that we did not find the right remedy, and we may even have spoiled the case by wrong means.

Lastly, it seems to explain the observation that in most chronic cases the well selected remedy develops its action visibly not before the eighth day, and that we then ought not to disturb its action either by repetition or change, before the thirty-fifth day.

Intermittent Fever, Fever and Ague.

This fever is caused by a poison which, under certain conditions, originates in marshy lands, swamps, in low regions near rivers, in newly settled places which just came under the hand of cultivation; in the neighborhood of canals when first dug; in regions which seemingly lie dry, but contain a great deal of under-ground water; the dryer the surface the greater the effluvia from underneath the porous and cracked crust. This poison is called *swamp-miasma*, or *malaria*. Its nature is entirely unknown, but differs totally from typhus, small-pox, scarlatina and measles

virus, as it never is propagated or carried from one person or place to another. Although swamps, damp, low regions, etc., are necessary for its development, yet they seem not the only conditions under which malaria is generated. Neither does the heat of the sun, the decay of vegetable substances, explain fully its presence here and its absence there; because there are large tracts of land where all these conditions exist without any sign of miasma; whilst, on the other hand, we find small, confined districts in which ague prevails every spring and summer. Another peculiarity of the poison is, that it seems to spread horizontally, so that it is often prevented from spreading further by a wall, a hedge, unless carried over these obstacles by a blast of wind. In those places where the miasma develops itself, ague prevails *endemic;* but how widely spread *epidemics* of intermittent fever originate is wholly unexplainable. So, also, have great ague epidemics been the forerunner of the Asiatic cholera; in hot climates both are often found together, and still more frequently go hand-in-hand, typhus fever, dysentery, influenza and ague; all which facts we cannot explain. Quite inexplicable is also the occurrence of *sporadic* cases in places where the miasma never prevails, and the attacked person had never been in a malarial region.

Besides this *malarial* theory of origin we have a neurotic, a cryptogamic and also a splenic theory as to the cause of intermittent fever.

The liability to invasion by the miasma is a very general one; no age or sex being exempted. Unlike small-pox, scarlatina, etc., the liability to repeated attacks increases after the first invasion. Persons thoroughly saturated with the poison may not suffer any more with acute outbreaks of chills and fever, but are more subject to a chronic enlargement of the spleen and a malaria cachexia.

The time of *incubation* is not known with certainty; in some cases the poison seems to develop its consequences at once, and in others it seems to linger in the system from six to twenty days, in still others three, six, and even nine months. Before, however, it produces its own characteristic type of *paroxysms* of chills and fever, with intervals of immunity—*apyrexia*—it often manifests itself for a while only as a general indisposition—a general malaise and disturbance of different functions.

The real paroxysm of an intermittent fever consists of three stages—the *chill*, the *heat*, and the *sweat*.

The *chilly stage* may last from a few minutes to full three hours. During this stage the appearance of the patient is remarkably altered; his whole volume seems to shrink; his face appears sunken, his nose pinched, and the rings on his fingers (if he wears any) become quite loose. The arterial blood is prevented from reaching the surface, while the venous blood is stagnated in the capillaries; this makes the skin pale and the lips and nails blue. The whole surface is cold, and covered with the well-known appearance of goose-skin (cutis anserina). The internal temperature, however, increases rapidly from two to three, even to five and seven degrees above the normal standard. The attending symptoms of this stage are numerous and various—headache, thirst, colic, cough, oppression, backache, etc., etc.; either one, or all, or still others, may exist in a lighter or graver degree or not at all at that stage.

The *stage of heat* creeps on slowly, still intermingled with chilly sensations. Finally, the whole body is in a perfect blaze; the temperature rises still higher and remains so until near the end of this stage. There have been cases observed where the thermometer rose to 108.5° and 109.4° F. Physical examinations may also detect a swelling of the spleen, which, having commenced during the chill, reaches its height during this stage. The heat generally lasts from a few to eight, or even twelve hours. Here, too, as in the chilly stage, the attending symptoms vary in number and character in each individual case.

The third stage, that *of sweat*, finally closes the paroxysm, and, in most cases, greatly relieves the sufferings of the patient. The temperature sinks step by step till at last the patient feels more or less completely well again. There are, however, enough cases in which this last stage is likewise attended by a number of various symptoms, which, indeed, are important, like those of the first and second stage, in regard to the selection of the remedy, but have no particular bearing on the diagnosis of the case.

The *apyrexia* which now follows is very seldom entirely free of all morbid manifestations, and these are likewise numerous and various, and for the observant homœopathic physician of the highest importance. Just these manifestations may present to him the hints which will lead him to the discovery of the required remedy for the case.

When an intermittent fever develops its paroxysms in these

three stages, and in this order, it is called *intermittens completa;* when, however, one or the other of the stages is wanting, it is called *intermittens incompleta;* and when the order of its stages is reversed, so that, for example, the paroxysm commences with sweat and ends with the chill, it is called *intermittens inversa.*

The apyrexia is, in different cases, of variable duration. It may last only six, eight or twelve hours, so that the new paroxysm sets in after twenty-four hours from the one preceding, then it is called a daily or *quotidian fever;* if twice twenty-four hours elapse between the paroxysms, it is called a *tertian fever;* and if three times twenty-four hours intervene, it is called a *quartan fever.* Sometimes it recurs only every seventh day—*intermittens septiana.*

The most frequent forms are the quotidian and tertian. Sometimes it happens that the paroxysms keep no regular times; they either set in each time earlier (*anticipating*), or later (*postponing*). In such cases it may come to pass that the original type is altogether changed into another; for example, a quotidian by postponing into a tertian, or a tertian by anteponing into a quotidian. When a fever-paroxysm lasts so long that its end reaches to the beginning of a new paroxysm, it is called a *febris intermittens subintrans.* When, however, the intervals of a quotidian, tertian, or quartan fever are again interrupted by another paroxysm, then it is called a *febris intermittens duplicata.* The double quotidian consists of two paroxysms within twenty-four hours, the intervening being generally lighter than the original. The double tertian has one paroxysm every day, mostly at different hours, and again the intervening lighter than the original; while the double quartan has two paroxysms in three days, and in this way, that two successive days are fever days, and the third day is free.

Masked intermittents show themselves usually as *typical neuralgias,* in the course of one or another nerve trunk, which, however, cannot be distinguished from other neuralgias, except by their typical recurrence; they manifest themselves also in the form of intermittent hyperæmia, hæmorrhage, œdema, coryza, bronchial catarrh, etc., as typical skin affections, such as erysipelas, purpura, urticaria, pemphigus, and in many other typical forms of diseases.

A long-continued, often-times suppressed intermittent fever frequently terminates in dropsy in consequence of existing functional disturbances of the spleen, which gradually become an

organic lesion, or in chronic parenchymatous nephritis, or scorbutic affections and general ague cachexia.

THERAPEUTIC HINTS.—Acon., in recent cases of young individuals of a full habit; all the stages must be sharply marked, with a prominent congested state of the head and chest. The pulse is full, hard and frequent. During the *chill* internal heat, with great anxiety, sensitiveness and restlessness; the pupils are contracted. The *heat* is confined mostly to the head and face; great thirst for cold water and inclination to uncover. The *sweat* is most prominent on the parts covered, and is attended with earache and profuse micturition.

Ant. crud., predominant gastric symptoms: thick-coated tongue; bitter taste; nausea; belching; vomiting; loss of appetite; little or no thirst; pain in the bowels, diarrhœa or constipation. Sweat breaks out after the chill with the heat but soon disappears, dry heat continuing.

Apis, according to Wolf, is one of the most important remedies in all kinds of intermittent fevers, and indeed has been used everywhere with great success. Chill with thirst about three or four o'clock P.M.; worse in a warm room or near the stove; renewed chilliness from slightest motion, with heat of the face and hands. *Heat*, especially in the chest, pit of the stomach, bowels, female organs, and hands, with muttering and unconsciousness; diarrhœa; shortness of breath; drowsiness or sleeplessness; rarely thirst. *Sweat* alternates with dryness of the skin; no thirst. Nettle-rash during sweat or apyrexia. During the *apyrexia*, pain under the short ribs, worse on the left side; great soreness of all the limbs and joints; great debility; enlargement of the abdomen; swollen feet and scanty urine. Apis is therefore indicated not only in recent but also in protracted and badly-treated cases. After it Natr. mur. follows well.

Arnica, before and during the chill great thirst; drinks a great deal, and vomits afterwards; yawning and stretching; pain in all the bones; bed and sofa feel too hard; the chill is felt worst in the pit of the stomach; cold hands and feet, with heat in the head and face, and redness of one cheek; *heat*, with indifference, stupor; drinks less; the *sweat* smells sour; during the *apyrexia* stitching pain in the region of the spleen; soreness of the spleen on pressure; aching in all the limbs as though beaten.

Arsen., intermittens incompleta. *Before* the attack: vertigo;

headache; yawning; stretching; general discomfort; weakness; pain in the pit of the stomach and empty eructations; cutting pain in the bowels. The *chill* is frequently intermixed with heat; or heat and chilliness follow each other in rapid succession; or the patient feels cold inside and burning hot outside. During the chill: generally no thirst; if there be any, drinking increases the chill and causes vomiting; oppression and spasms in the chest, with hacking cough; bloating of the pit of the stomach; pain in the pit of the stomach; anxiety, restlessness; blue nails. The *heat* is either wanting, or mixed up with the chill, or is very great, with delirium, unconsciousness and headache; restlessness; anxiety; pulsation through the whole body; tension and pressure in the left hypochondrium; burning in the stomach; generally great thirst, but drinking little at a time; oppression and short breathing; palpitation of the heart. The *sweat* sets in some time after the heat, or does not appear at all; during the sweat the thirst is often the greatest, and the patient drinks large quantities of water; the symptoms of the former stages become ameliorated. The *apyrexia* is never clear. The face is pale, sunken, earthy, sallow, bloated; the lips are pale, cracked, swollen and crusty; the tongue is white and dry, or coated yellowish; the taste is gone, without bad taste, only after eating, bitter taste; the appetite is sometimes increased for a while, satisfying it causes heat and nausea, and not satisfying it causes an unpleasant sensation of discomfort; the hypochondriac regions are swollen, especially the left, the abdomen is bloated; the stools are diarrhœic, fetid; the urine is rather scanty and turbid, the feet are œdematous; the skin is pale, often covered with cold perspiration; there is sleeplessness, especially the night before a new paroxysm, and great sinking of general strength.

Bellad., the *heat* predominates, with vertigo, hallucinations, delirium, restlessness, anxiety; drowsiness with inability to go to sleep, or sopor; headache, throbbing in right temple, injected eyes, and sensitiveness to light; red cheeks; throbbing of the carotid arteries; choking sensation in the throat; great thirst and dryness of the mouth and throat; palpitation of the heart; painful swelling of the spleen; constipation; great irritability of temper, or else tearful mood.

Bryon., the *chill* predominates, only exceptionally the heat; great thirst during the chill, still greater during the heat; the sweat lasts long. There is, as the most important leading symp-

toms: stitching pain in the sides of the chest, with hard cough; stitching pains in the hypochondriac regions and in the abdomen; rheumatic pains in the limbs; all worse from motion.

Cact. grand., regular paroxysms at 11 o'clock A.M. or P.M.; first chill, then burning heat, with headache, coma, stupefaction, insensibility; thirst, shortness of breath, inability to remain lying. The sweat is profuse, and attended with inextinguishable thirst. The apyrexia is complete.

Calc. carb., chronic cases; chill commences in pit of stomach; thirst during the chill. General indications: hardness of hearing; pot-belliedness; hard, bloated stomach; enlarged spleen; diarrhœa white, undigested; monthly period too early and too profuse; glandular swellings about the neck; altogether scrofulous diathesis.

Capsic., *chill*, mostly with thirst, and worse after drinking; the chill commences in the back and spreads all over, and is relieved by hot irons or jugs of hot water; after the chill *sweat;* or *heat*, with sweat and thirst at the same time. During the chill: giddiness and excruciating tearing pains in the back and limbs, extorting cries and causing the patient to bend together like a hedgehog. During the heat: cutting pain in the bowels, and slimy, burning stools, with much pressing and bearing down; headache.

Carb. veg., irregular paroxysms, sometimes commencing with sweat, followed by chill. Before the attack toothache, headache and pain in the limbs. During the chill great thirst. Heat and sweat frequently mixed together, with evening hoarseness, dizziness, red face, nausea, but no thirst. The sweat is sour and sometimes very profuse. Afterwards long-continued headache; heat and burning in the eyes; yellow complexion; liver-spots in the face; belching; bad smell from the mouth; stomach bloated; spleen swollen and painful; abuse of quinine.

Cedron, chill at 3 A.M. or 3 P.M., is preceded by mental depression, or excitement; during chill no thirst; chill predominates; during *heat* thirst for warm drinks; numb, dead feeling in legs; *sweat* profuse, with thirst and tearing pains in extremities. During *apyrexia* general malaise and great debility.

Chamom., *heat* and *sweat* predominate, and are often together; red face, or only one cheek red and the other pale; sweat especially about the head, and mostly hot. The tongue is red in the middle and white on the sides, or white in the middle and red on

the edges; bitter taste; bitter vomiting; great oppression about the heart; diarrhœa. The patient is very irritable, excited, complaining, with great restlessness and anxiety.

China, the paroxysms come mostly at irregular hours, with thirst *before* (not during) chill or heat and during the sweat; they are mostly preceded by palpitation of the heart with anxiety; sneezing; nausea; hunger; pressure in the stomach; pain in the bowels and jerking, tearing headache; pain in the limbs and great debility. During the fever the veins appear greatly enlarged, and there is great congestion to the head, with redness and heat of the face, even with chilliness and coldness of other parts of the body. The sweat is sometimes only partial and cold, for example, on the forehead; at other times it is profuse, and almost always attended with thirst. In general the patient sweats easily, especially at night, during sleep; there is swelling of the liver and spleen, painful to motion and pressure; a characteristic weakness, exhaustion and cachectic appearance, a sallow yellowishness of the skin, not only in the face but also on the chest and region of the stomach, and different anæmic and dropsical symptoms. The urine is scanty and turbid, with a thick yellowish or brick-dust sediment, or a sediment of little crystals. The presence of swamp miasma is another indication.

Chin. sulph., regular paroxysms at the same hour, and clear intermissions; real thirst mostly only during the sweat. During the paroxysm *pain in the dorsal vertebræ on pressure;* pain in the region of the liver and spleen on bending, taking a deep breath, coughing; the urine gives a voluminous, brick-dust-like or fatty sediment, or contains crystals of urates; ringing in the ears, with dizziness and enlarged feeling of the head.

Cimex, *before* the *chill* thirst and heaviness in the legs. The chill *commences* with clenching of the hands and violent raging; it is *attended* with pains in all the joints; sensation as if the tendons were too short; the knee-joints are usually contracted, so that the legs cannot be stretched; the chest feels oppressed, obliging one to frequently take a long breath; irresistible sleepiness; it *ends* with a tired feeling in the legs, obliging one to change position constantly; with thirst; drinking, however, causes violent headache; continuous dry cough; oppression of breathing; heaviness in the middle of the chest; anxiety. Abstaining from drinking ameliorates all this. The *heat* is attended with gagging; the œsophagus feels constricted, and the

water drank goes down only at intervals; no thirst. The *sweat* is mostly on the head and chest, accompanied by hunger.

Cina, thirst only during the chill, or only during the heat. Nausea, vomiting, diarrhœa, pain in the stomach and abdomen may set in at any time, and soon be followed by a clean tongue and ravenous appetite. The face is puffed and pale even during the heat, or glowing red; the pupils are much enlarged, and the child picks often at the nose.

Diadema, paroxysms every day or every other day at precisely the same hour; chill predominating; constant chilly feeling; always worse on rainy, cold days; menses too early and too profuse; enlargement of the spleen.

Eupat. perf., long before the chill great thirst, which continues through chill and heat; after drinking, vomiting; the paroxysms usually occur in the morning, about seven or nine o'clock; they are attended with intense aching in the back and limbs, as if the bones were broken, and with a number of gastric or so-called bilious symptoms; the sweat is generally not very prominent, or even wanting, but sometimes drenching, and the intermisson is sometimes marked by a loose cough.

Eupat. purp., the paroxysm comes at different times in the day, every other day; *chill commences in the small of the back* and then spreads over the body; violent shaking, with comparatively little coldness; thirst during chill and heat; vomiting between chill and heat; violent bone-pains during chill and heat.

Ferrum, similar to Arsen. and China, it will frequently be of service in protracted and badly-treated cases by quinine, which are characterized by anæmia and total prostration of the reproductive sphere of the system. We observe great paleness of the face, which, however, may flush up from any excitement to a fiery redness of short duration; paleness, whiteness of the inner surface of the mouth; vomiting of everything that is eaten without being digested; swelling and hardness in the hypochondriac regions; great weakness and emaciation; dropsical swelling of the feet; frequent congestion of the lungs; continued shortness of breath; nun's murmur in the veins.

Gelsem., chill in afternoon or evening, commencing in hands and feet, or running up back from sacrum to occiput, without thirst; or only fever at 10 A.M., without chill and without thirst. The heat is attended with red face and sleep, or with nervous restlessness, delirium, mental anxiety or agitation, vertigo; a

curious sensation of *falling*, sensitiveness to light and sound, partial blindness or deafness. Where there is a want of distinctness in its several stages, the whole presents an adynamic condition of the system.

Hepar, bitter taste in the mouth; bilious vomiting; diarrhœa; *itching, stinging nettle-rash* before and during the chill; fever-blisters around the mouth; tettery eruption on the chest; previous abuse of mercury. During the sweat keeps himself closely covered.

Ignat., thirst *only* during the *chill*, or in short spells, independent of any stage. The chilliness is relieved by the external application of warm things; external heat, or heat in some, and coldness of other parts of the body; sometimes with pain in the bowels; afterwards sleep and sweat. The paroxysms are sometimes accompanied with spasmodic symptoms; heaviness of the head; aching pain in the occiput; vomiting and pressive pain in the pit of the stomach; urticaria over the whole body. The paroxysms are apt to postpone or antepone.

Ipec., predominance of gastric symptoms during the paroxysm as well as during the apyrexia. It begins chiefly with yawning, stretching, and a collection of saliva in the mouth; then follows the chill, aggravated by external warmth, with or without nausea, vomiting, diarrhœa, or great oppression of the chest, with heaving. The three stages may be very strongly marked or very light; the thirst is generally quite inconsiderable in all of them. The apyrexia has the same gastric symptoms, especially a marked sensation of relaxation of the stomach, as though it were hanging down; entire loss of appetite. The spleen is little, if any, swollen. Miasma; after the abuse of quinine and arsenicum; after faults in diet.

Laches., one of the most important remedies after the abuse of quinine. The paroxysms are mostly in the afternoon, with pain in the small of the back and limbs; restlessness; oppression of the chest; jerking; headache; red face; talkativeness. During the chill wants to lie near the fire, or be held tightly to relieve the pain in head and chest, and prevent shaking.

Lycop., where there are other chronic symptoms—cough, with thick, yellow, salty expectoration; oppression of the chest; pain in the left side; palpitation of the heart; pale face, often with circumscribed redness of the cheeks; sour vomiting between chill and fever; bloatedness of the stomach; rumbling in the

bowels; great debility; the sweat is often sour and profuse, sometimes following immediately upon the chill, and at other times not until some time after the heat; after the sweat, thirst. Fever paroxysms often from 4 to 8 P.M.

Mangan., incomplete intermittent, consisting of only heat and sweat, with moderate thirst.

Menyanth., irregular time and type; chill predominating without thirst; especially coldness of fingers, toes and legs, not relieved by external warmth, of abdomen.

Mezer., incomplete intermittent, consisting of chill with thirst, and sweat with sleep.

Natr. mur., one of the most important of all in recent as well as in inveterate and badly-treated cases. Hard chill very often at 10 or 11 o'clock A.M., with great thirst which continues through all stages. The heat is characterized by the most violent headache, relieved by perspiration. There soon appears an eruption of hydroa or fever-blisters, which cover the upper and lower lip like pearls. During the apyrexia sallow complexion, dry, white-coated tongue; bitter taste; water tastes bad; loss of appetite; after eating, sour belching and vomiting; pressure in the stomach; swollen stomach; pain in the region of the kidneys; cutting pain in the urethra *after* micturition.

Nux vom. is characterized by great prostration and paralytic weakness from the beginning. Hard *chill* with bluish face and blue nails; stitching pain in the abdomen; spasmodic drawing and stiffness of the lower extremities; great thirst; the *heat* is great, and notwithstanding this the patient covers himself all over, because uncovering or the slightest motion makes him feel chilly; headache; great thirst, especially for beer. Both chill and heat are accompanied with gastric and bilious symptoms. During the sweat the painful symptoms gradually subside. During the apyrexia, headache; yellowish complexion; belching; loss of appetite; nausea; vomiting; constipation; liver and spleen swollen; cough; debility; soreness of the spine.

Opium, sleep during chill, heat and sweat; during sweat he still feels burning hot; children and old people.

Podoph., chill at 7 A.M., without thirst; heat with thirst; loquacity during chill and heat; sweat with sleep; besides, pain or uncomfortable feeling in region of liver which makes him rub and stroke this part; diarrhœa during forenoon, frequently changing in color.

Pulsat., the several stages are in general not very violent, and mostly unattended by thirst; or thirst only during the heat; or the several stages are mixed up; one-sided sweat. The paroxysms set in frequently (though not always) in the evening, and last through the night. Characteristic features: tearful and peevish; headache during the intermission; face pale or greenish-yellow; tongue moist, coated, with bad taste; loss of appetite and thirst; nausea; vomiting of slime and bile; spleen enlarged; stools diarrhœic, slimy, watery, at night; profuse, watery urine; suppressed or scanty menses; pain in the chest and cough, with pain in the head and pit of the stomach; frequent palpitation of the heart; murmur in the jugular veins; constant chilliness and drowsiness; chlorotic state of the system.

Rhus tox., before the chill: stretching of the limbs; yawning, with a feeling in the maxillary joint as if sprained; thirst; dry, teasing cough, with sweetish, foul expectoration. Chill in some parts, and in others heat; or hard chill, with aching in the small of the back, drawing in the limbs, and formication in the fingers; with restlessness and constant change of position. The heat is sometimes before and sometimes after the chill, and often attended with nettle-rash; pain in the bowels and diarrhœa. The following sweat is often profuse and sour. The paroxysms set in most frequently in the evening and last through the night; they generally return every day, but seem altered every other day.

Sabad., intermittens incompleta, consisting of chills only; or intermittents with predominating chill, and thirst between chill and heat; the paroxysms occur precisely at the same hour; sometimes they are accompanied with morbid hunger in alternation with loathing of food; during the apyrexia there is constant chilliness; sometimes cough with heavy breathing and pain in the chest.

Sambuc., profuse, debilitating sweat, lasts through the apyrexia, commences in the face, is worse while the patient is awake, disappears and changes to a dry heat when he is falling asleep.

Sepia, chronic cases, with one or the other of the following symptoms: frequent flushes of heat; paralytic sinking down of one of the upper eyelids; yellowishness of the white of the eyes; brownish-yellow saddle across the bridge of the nose; yellowishness around the mouth; loathing of meat and milk; diarrhœa after drinking milk; pain in the liver on moving; bearing down

towards the genitals; palpitation of the heart; tettery eruptions; the coldness begins in the feet and rises upwards.

Silic., in scrofulous subjects.

Stramon., chill, with icy-cold skin, covered with cold sweat; hands and feet livid, head and face hot; vertigo; delirium; epileptiform convulsions. Wants to be covered during all stages.

Sulphur, like Sepia, in chronic cases; especially when rooting in the soil of suppressed itch or other cutaneous eruptions, with one or the other of the following symptoms: heat on the top of the head, with cold extremities; red lips; red tip of the tongue; worse always after eating; sudden attacks of faintness, with hunger in the forenoon; costiveness, or else looseness of the bowels early in the morning, driving out of bed; hæmorrhoidal complaints; leucorrhœa; cough when lying down in the evening; feverishness through the night; complete sleeplessness; itchiness of the skin.

Tart. emet., thirstlessness during chill and fever; shuddering with sleepiness; heat with sopor; sweat with sleepiness; fainting; anxiety; and pain in the lower extremities.

Thuja, according to Wolf, if Apis is not sufficient, and the complaint originates in a chronic gonorrhœal contamination of the system; only the uncovered portions of the body perspire; those which are covered are dry and hot.

Veratr., chill at 6 A.M.; chill and coldness predominate, with sticky, cold perspiration and thirst; heat not so marked; the sweat profuse, often cold and long-continuing. Attending symptoms: great exhaustion; sinking of strength; nausea; vomiting; diarrhœa, or obstinate constipation; cramps in the limbs. It is indicated, therefore, in the most pernicious kinds of intermittent fevers, and those which occur during the prevalence of cholera.

For still further particulars, I refer to H. C. Allen's and T. P. Wilson's Treatises on Intermittent Fever.

Pernicious Intermittent; Remittent and Continuous Malarial Fevers; Congestive Fevers.

1. **Pernicious fevers** are characterized by special dangerous, local affections of important organs; they often appear in the form of an epidemic; their paroxysms are usually of the same duration as those of a simple intermittent; sometimes they last longer; their separate stages may be distinct or ill-defined, with complete

or incomplete intermittens of various types. When there are severe *disturbances* of the *nervous system*, one of the most common forms is the *comatose*, or the *intermittens apoplectica*, with unconsciousness, stertorous breathing, etc.; the *eclamptic* form, mostly found among children and puerperal women, with convulsions and unconsciousness; the *tetanic* form, the severest of all pernicious forms, with tetanic spasms; the *hydrophobic* form, with symptoms of hydrophobia. When the alimentary canal is especially affected, we have the *choloraic* form, especially found in hot climates, which may increase to an *algid intermittent;* the *cardialgic* form, with great pains in the region of the stomach; the *dysenteric* form, with all the symptoms of dysentery; the *hæmorrhagic* form, with hæmorrhages from the stomach or bowels. The *pneumonic* and *pleuritic* forms show serious affections of the lungs and pleura, and the *icteric* form especially attacks the liver.

2. **Remittent** and **Continuous malarial fevers** are frequently met with in the south and southwest of the United States, and in the tropical countries. They are all of a malarial origin, which is proved by the fact, *that they occur exclusively in regions where ague prevails*, in regions, therefore, which, by their conformation of soil and climate, constitute the necessary conditions for the development of the miasma; and it is further proved by the fact, *that remittent fevers, when improving, gradually change into the intermittent type.* Hence remittent fevers are only graver forms of the effects of the same unknown virus, called miasma, that causes the *ague*, and this corresponds again with the fact, that we find remittent fevers oftener in such regions in which the *common intermittent cases are likewise much more severe* than in other regions.

Remittent fever has no apyrexia, but in place of it there is merely a slacking off of the fever, which is again succeeded by another exacerbation. If it be a *continued fever* there is not even such a remission of its violence. These *remittent* fevers may be divided into three forms:

1. *The bilious or gastric remittent*, characterized by commencing with a chill, which is followed by a violent fever and many gastric symptoms; the spleen is swollen; there is slight icterus; irregular and whitish stools; herpes labialis; headache; pain in the limbs; dizziness; ringing in the ears; epistaxis; bronchial irritation; great debility. It might be confounded with the beginning of typhus if it were not for the fever blisters around the

mouth and the exacerbations, recurring at first irregularly, but later, regularly, gradually assuming a regular intermittent type. It may last from several days to three weeks, and corresponds to the *febris intermittens subintrans.*

2. *The typhoïd form*, gradually loses the remissions and becomes continuous. The patient is delirious or lies in a stupor; his tongue is dry and his spleen swollen. In addition to all this there may be icterus, or symptoms of pneumonia, dysentery, etc. This form lasts from eight to fourteen days, and, if getting better, works over into an intermittent type; if fatal, the patient dies in a comatose condition, corresponding thus to the comatose form of a pernicious intermittent.

3. The *gravest form* is characterized by a high degree of *adynamia*, and a tendency to *rapid collapse.* Such patients are deeply apathic from the very beginning, and exhibit functional disturbances in almost all organs. Many patients are icteric; others bleed from the nose, stomach or kidneys; others show albuminuria, or suppressio urinæ; and still others have cholera-like or dysenteric discharges from the bowels. Liver and spleen are swollen, terminating sometimes in inflammation and suppuration. The serous membranes show exudates, and the external skin is covered with petechiæ, or destroyed by decubitus and gangrene.

Congestive fever, malignant bilious fever, typho-malarial fever, etc., are only other names for the above-described different forms of remittent malarial fevers.

THERAPEUTIC HINTS.—Compare Intermittent Fever.

The *comatose* form requires principally Bellad., Opium, Tart. emet., Hyosc., Laches., Stramon.

The *adynamic* form especially Arnica, Arsen., Bryon., Camphora, Carb. veg., Chin. sulph., Ferrum, Hydr. ac., Laches., Phosph. ac., Rhus tox., Veratr.

Yellow Fever.

The following is from the special report of the Homœopathic Yellow Fever Commission.

"Yellow fever is a specific disease, entirely independent of malaria, occurring rarely a second time in the same person, in-

fectious and capable of transmission to any distance by means of fomites or infected material.

"The yellow fever germs, for we accept provisionally the germ-theory of the disease, are indigenous to the West Indies and perhaps to the west coast of Africa, and have been thoroughly naturalized in many localities in the southern portion of the United States. They were imported into New Orleans during the last quarter of the eighteenth century, and have existed in the soil or atmosphere of that place ever since, either in a latent or an active condition. They may lie dormant for many years consecutively, and they require a concurrence of causes to develope them into a state of disease-producing activity.

"Some of the factors which seem to be favorable to the excitation of the yellow fever germ are the following:

"Low, swampy ground near the level of a tropical sea. Long continuance of very high temperature, following heavy rains. Long continuance of south and east winds. Aggregations of human beings with the excreta of their bodies in small spaces. A crowded and dirty ship may be a nidus for yellow fever, as well as a crowded and dirty city. Long continuance of calm weather, unbroken by thunder-storms. Exposure of decaying vegetable and animal matter to a burning sun. Inefficient drainage and the general accumulation of filth, especially the city garbage. Deficiency of ozone in the atmosphere. Pestilential exhalations from an upturned soil.

"When the yellow fever germ has been waked into activity by these causes, it may be transported to places where none of them exist. It seems that a certain concurrence of several of the above factors is necessary to the generation of yellow fever. There is probably one combination in one epidemic, and a somewhat different combination in the next epidemic. An epidemic may be mild or severe, according to the number and force of the concurring causes. There may also be other unknown, but discoverable factors, which may be necessary at one time to produce an epidemic, and not necessary at another. No one of the above suggested causes could excite an epidemic by itself, and it is not probable that they all ever concurred equally to the formation of the disease. The most extensive collections and comparison of facts are necessary to illumine the very great darkness which lies upon these complex questions.

"The naturalized yellow fever germs may receive so slight a

stimulus as to produce only a few sporadic cases. Or they may be vitalized in certain localities to such a degree as to occasion quite an outbreak in those localities, not easily communicated to other quarters. Or thirdly, the disseminated germs may be vivified in all directions, and a general epidemic excited. Or lastly, the naturalized germs may lie entirely quiescent, until fresh and active germs are brought in from foreign ports, which then act as sparks to ignite the inflammable material already existing. We thus have four shades or degrees of yellow fever visitation: sporadic cases; local and limited outbursts; epidemics from naturalized germs, and epidemics from importation.

In sporadic cases and limited outbreaks the specific nature of the fever is not clearly brought to light, and it is sometimes difficult to diagnose it from the dominant malarial or bilious diseases. The imported epidemic, whether from Havana to New Orleans or from New Orleans to Memphis, etc., etc., is always a more quick-spreading and malignant disease than that arising from our naturalized germs. The comparative mildness of the late epidemic in New Orleans, is one out of several reasons for believing that the disease was of local origin.

"The yellow fever of domestic origin can only be prevented by local sanitary measures. So long as the public authorities ignore the crying evils at home, and watch only for the enemy at the seaside, we shall continue to be scourged with repeated epidemics of yellow fever. Quarantine may or may not keep out the tropical foe, but our utmost energies should be concentrated against the enemy which has been domiciliated in our households for nearly a century."

The incubation is short, frequently not longer than a day or two; in some cases fourteen days.

Its course is an acute one, lasting from three to ten days, and consists of three distinct stages.

1. **The febrile stage.**—"Very high fever, preceded or not by a chill, with extremely severe pains in the head (occipital region predominantly), back and limbs. Temperature from 103° to 107° F.; great restlessness and malaise, accompanied sometimes with mental anxiety and fear of death; vomiting of ingested bile; red, watery eyes; suffused countenance; sleeplessness or stupor with intense heat; delirium, sometimes violent, sometimes muttering; skin very hot and dry, but very easily excited to perspiration."

2. **The stage of exhaustion.**—"Passing in most cases by insensible gradations from a state of great apparent, but of really little danger, the patient enters the second stage of yellow fever in which he may seem to be doing very well to an inexperienced eye, while in fact he may be in an alarming and even hopeless condition. The pulse becomes natural again, or weak and irregular, or in some cases very slow, forty or even thirty to the minute. The patient expresses himself as well, wants to eat or drink, would commit great imprudence in diet, or talking, or throwing off cover, or getting out of bed, if permitted; apathy, indifference, no realization of danger; at night sleeplessness, sometimes a terrible pervigilium, restlessness, great nervousness; sour or acid eructations; epigastric pains; tenderness on pressure over the liver and spleen; vomiting of ingesta, of a claret-colored water, of mucous substances specked with blood, of pure blood, of floating shreds like bees' wings, of brown vomit, of genuine coffee-grounds, black vomit; excessive irritability of stomach; black stools; hiccough. Sudden and unaccountable changes of color; alternate flushings and paleness; yellow tint of the sclerotica; increasing yellowness of the surface, even in some cases to the deepest jaundice and hæmorrhages; oozing of dark blood from gums, nose, eyes, ears; hæmorrhage from the uterus, bowels, or kidneys; petechiæ; decided albuminuria; scanty or suppressed urine, followed by coma or convulsions; secondary fever, from local congestions or inflammations."

3. **The collapsed stage.**—"Skin of a dirty yellow or almost bronze color; large petechial spots; slow oozing of blood from every orifice of the body; black vomit; bloody, black, or totally suppressed urine; extreme jactitation; total apathy or muttering delirium; hiccough; cold extremities; feeble and flickering pulse; convulsions; involuntary discharges of black matter, and utter prostration, sometimes with precordial anguish and undying irritability of the stomach." (Report of Homœopathic Yellow Fever Commission.)

THERAPEUTIC HINTS.—In the *first stage* most physicians have used **Acon., Bellad., Bryon.**; some have recommended **Gelsem.** and **Ver. vir.**, one has called attention to **Eupat. perf., Cimicif., Baptis.** In the *second stage* all used **Arsen.**, many also **Laches.**, or **Crotal.**, and on failure of these remedies **Carb. veg. Phosphor.** is barely mentioned by two physicians. In the *third stage* the choice lay

between **Arsen., Crotal., Carb. veg., Hydr. ac., Secale,** and **Tincture of Acon.**

SPECIAL HINTS.—Acon., first stage; burning heat and dry skin; full, hard, quick pulse; desire to be uncovered; great restlessness and anxiety; fear of death; dizziness on rising; pain in the forehead and temples; face dark red; eyes injected, sometimes sensitive to light; lips and mouth dry; great thirst; nausea, vomiting; heat in the stomach; short, anxious respiration; distress in cardiac region; pain in the back and extremities. Useful only for a short time; is followed well by **Bellad.** (Taft, Hardenstein.)

Apis, pain in forehead and temples, relieved by pressure; burning, stinging heat in face with purple color; dry, swollen and inflamed tongue with difficulty of swallowing; strangury, or urine scanty and high colored; sleep disturbed by many dreams; restlessness and delirium. (Angell.)

Arg. nitr., second stage; vomiting of a brownish mass, mixed with coffee-ground-like flakes. (Holcombe.) Meningeal symptoms. (Hardenstein.)

Arsen., second and third stage; dull, heavy or throbbing pain in the head; face yellowish and livid, or deep, dull red; eyes dull and sunken, with dark rings around and yellow sclerotica; nose pointed; nosebleed; lips and tongue brown or black; vomiting, especially after drinking; black vomit; burning or stitching pain in the epigastrium and region of the liver; great pressure in the pit of the stomach; cramp-pains in the bowels; diarrhœa, with tenesmus, or painless and involuntary; bloody discharges; retention of urine; bloody urine; oppression of the chest, with short, anxious breathing; pulse irregular, frequent, small, trembling; internal heat and external coldness of the body, and cold, sticky perspiration; stiffness and lameness of the limbs; rapid sinking of strength; anxiety and restlessness; wants to go from one bed to another; delirium with desire to escape. (Taft, Holcombe.)

Baptis., stupid stare and bewildered look; cannot collect himself; face dull red, listless, besotted; dry, red tongue, or with a dark yellow coating; difficulty of protruding the tongue; fetid breath; urine scanty and high-colored; all symptoms worse from evening till one o'clock A.M. (Angell.)

Bellad., first and second stage; dry, burning heat, with changing pulse; sharp, stitching, shooting and throbbing pains in the

head and ears; face scarlet red, shining and swollen; eyes red, glistening, staring, dilated and oscillating pupils; carotid arteries pulsating; dry, hot tongue and throat; nausea and violent vomiting; cramp-like pain in the stomach; burning and throbbing in the pit of the stomach; urine red or brown; painful heaviness and cramp-like pain in the back, loins and legs; head and body hot, feet cold; delirium, afraid of creeping things. (Hardenstein, Taft.)

Bryon., first and second stage; headache in back of head down to neck and shoulders, worse from motion; pain in the eyes when moving them; the eyes are red or dull and glassy, or glistening and watery; tongue dry and coated white, or dirty-yellowish, or brownish; burning thirst; vomiting worse after drinking; fulness and oppression in the pit of the stomach and bowels; pleuritic pains in the chest with or without cough; pain in the back and limbs; yellow skin; anxiety and fear about the future; loss of memory; delirium. (Taft, Hardenstein, Angell.)

Cadm. sulph., when nausea is not relieved by Ipec. or Arsen., in first stage. Taste like pitch in the mouth; salty, rancid belching; nausea in mouth, chest and abdomen, often with pain and cold sweat in face; pain in abdomen; vomiting of sour, yellow and black matter; burning and cutting in stomach; vertigo, room and bed seem to spin around. (Hardenstein.)

Camphora, when there is a severe and long-lasting chill at the commencement. (Holcombe.) Trembling of the internal parts; coldness of *limbs*. (Hardenstein.)

Canthar., second and third stage; complete insensibility; cramps in the abdominal muscles and legs; suppression or retention of urine; hæmorrhages from the stomach and intestines; cold sweat on the hands and feet. (Taft.) Strangury. (Holcombe.)

Chamom., suitable especially for women and children with gastric irritations. (Holcombe.) An intercurrent remedy for colic. (Hardenstein.)

Carb. veg., like sulphur in cholera, so is, according to Hering, Carb. veg., that medicine which, more than any other, corresponds in the totality of its action, to yellow fever. Taft recommends it, especially for the third stage, and Howard gives the following indications: hæmorrhages, with great paleness of the face, violent headache, great heaviness in the limbs and trembling of the body.—The report of the Yellow Fever Commission gives the following indications: pupils do not respond to the

light; hæmorrhage from the eyes; repeated nosebleed, with small, intermittent pulse; hippocratic face, grayish-yellow; red cheeks, covered with cold sweat; bloody saliva; rancid eructations; enormous flatulence; burning in the stomach, with vomiting of blood; all discharges fetid and offensive; menorrhagia; capillary stagnation; cyanosis; thread-like pulse; sleepless, intensely restless, from suffocating sensations; icy coldness of the body; ecchymoses.

Cepa is said to have cured a case of yellow fever when raging in Philadelphia; there are a good many symptoms in its pathogenesis which might suggest its further application.

Cimicif., delirium with excessive restlessness; subsultus tendinum; waking from sleep with a start; dreams and delirium about negroes, devils, etc. (Angell.) Violent pains in small of back; stiff neck; soreness of all muscles; pains like electric shocks here and there; sharp pains from neck to vertex. Melancholy, indifferent, taciturn. (Report of H. Y. F. Commission.)

Coloc., for colic and colicky pains.

Crotal., is indicated especially by the hæmorrhages from the eyes, nose, mouth, stomach and intestines. (Bute.) The report of the Commission, and Hardenstein, give the following indications: delirium with *open* eyes; utter apathy; confused speech; disconnected answers, with coldness of the skin and rapid pulse; terrible headache, with red, puffed face; face yellow, or sometimes of a leaden color; blood flows from the eyes, ears and nose, indeed from all the orifices of the body, even bloody sweat; thirst; sour, acrid eructations; scraping, rancid sensation down the œsophagus to the stomach; extreme nausea and vomiting on least exertion; vomiting of bile, of blood; swelling of the whole abdomen; enlargement of the inguinal glands; bloody stools, sometimes involuntary; hæmorrhage from the urethra; painful retention of urine; menses anticipate; hoarse, weak, rough voice; pains in chest; pulse slower than natural (sixty beats), or intermitting and scarcely perceptible; pains in bones; deep yellow color of the whole body; purple spots; extreme depression of the vital powers; spasms; death by syncope; acts more on right side.

Crot. tigl., recommended by Hackett, an allopath; he saw from his doses aggravations, but afterwards rapid improvement.

Cuprum, when Arsen. does not relieve the vomiting of blood. (Küstner.)

Eupat. perf., valuable in first stage as an intercurrent remedy in cases where the bones ache as if broken, with head and backache, thirst and vomiting. (Angell.)

Gelsem., unconnected ideas, cannot follow any idea for any length of time; if he attempts to think consecutively, he is attacked by a painful vacant feeling of the mind; giddiness with loss of sight; indistinctness of vision, or double vision; fullness of head, with heat in face, and cold feet; pain in back of neck; heavy, dull expression of countenance, and yellow face, or nausea and paleness. Sticky feeling in mouth; fetid breath; tongue coated whitish or yellowish; dryness and burning in throat; sour eructations; pulse frequent, full, but soft. As soon as he goes to sleep, he is delirious. (Angell.)

Ipec., in the first stage: dizziness, chilliness, pain in the back and limbs, uncomfortable feeling in the epigastrium, with nausea, vomiting and great weakness. (Taft.) To be followed by Cadmium sulph. if relief is not soon attained. (Hardenstein.)

Laches., quite important in any of the stages. Küstner gave it also after previous abuse of mercury or quinine. The report of the commission, and Hardenstein, give the following indications: delirium at night; loquacious, disposed to quarrel; slow, difficult speech; drowsy; rush of blood to the head; red face; yellow conjunctiva; yellow or purplish tint of skin; blood dark, non-coagulable; small wounds bleed much; perspiration stains yellow; lips dry, cracked and bleeding; tongue heavy, trembling, dry and red, cracked at tip; tip red, centre brown; difficult speech; sour eructations; heartburn; nausea after drinking; vomiting, with palpitation; dyspnœa; anxiety about the heart; cannot lie on left side; irregular, weak pulse; urine almost black; persistent sleeplessness; fainting; trembling all over; sudden flushes of heat; sensitiveness about the neck and pit of stomach against any pressure; worse when waking; better after nourishment. Acts more on left side.

Mercur., yellow skin; red, injected eyes, sensitive to light; paralysis of the one or the other limb; tongue moist, coated, thick and white, or dry with brown slime; pulse irregular, quick, strong, and intermitting, or soft and trembling. Drowsy or sleepless from nervous irritation; tired and weak; rapid sinking of strength; dizziness and violent headache; violent convulsive vomiting of slime and bilious matter; burning pain and sensitiveness of the stomach; constipation or diarrhœa of slime, bile

or blood; coldness of the extremities with cramps. Great irritability of all the organs; anxiety and restlessness; weak memory; fears; discouragement; crossness. (Taft.)

Nux vom., after allopathic drugging, or in persons accustomed to drinking strong liquors. According to Taft: yellow skin, pale or yellowish face, especially around the nose and mouth; eyes injected, yellow and watery; dark rings around the eyes; tongue slimy or dry, cracked and red on the edges; thirst for beer or stimulating drinks; burning in the stomach; pressure or cramp-pain in the stomach; vomiting of sour, bilious, or slimy substances; hiccough; dizziness or headache; trembling of the limbs; cramps in different parts of the body; contractions of the abdominal muscles; thin, slimy, bilious or bloody stools; burning pain in the neck of the bladder, with difficult urination; coldness, lameness and cramps in the legs; cold feet. Excessive anxiety; fear of death; despondency or loss of consciousness and delirium, with moaning and groaning.

Phosphor., hæmorrhagic form, with petechial spots, or with meningitis, or especially pleuritic pains after Bryon. (Hardenstein.) "Its power of producing acute yellow atrophy of the liver, fatty degeneration, malignant jaundice, albuminous urine, the hæmorrhagic diathesis, and many of the symptoms of **Arsen.** and **Crotal.**, shows that it is a remedy of great homœopathic applicability to yellow fever." (Report of Commission.)

Rhus tox., according to Taft: dirty yellow color of the body; glassy, sunken eyes; dry, black tongue; talkative delirium, or coma with rattling respiration; constant groaning; torturing pain and burning in the stomach; nausea; vomiting; paralysis of the lower extremities; cramps in the abdomen; colic; diarrhœa; difficulty in swallowing; constant restlessness and tossing about. According to Angell: bright redness of face (in first stage), or pale and sunken face, with pointed nose; epistaxis; dryness of mouth and throat; dry cough and red tongue, or dark brown (mahogony) or black; cracked tongue, unable to protrude it; eructation and rumbling in abdomen causing great distress; diminished urine; sleeplessness.

Sulphur, melancholic; fearful; undecided; sad; absent-minded; dizziness; headache; face pale or yellowish; eyes red or yellowish; itching and burning in the eyes; noises in the ears; tongue dry, red, or with white or brown coating; aphthæ in the mouth; nausea with trembling and weakness; vomiting of sour, or bilious,

or bloody and black masses; pressure in the stomach; pain in the back and loins. (Taft.)

Tart. emet., continuous nausea with vomiting, or vomiturition with perspiration on forehead; shuddering; attacks of fainting and trembling; great prostration. (Angell.)

Verbena Jam. The juice of the leaves of this plant, the species of which is not properly given, is said to have cured a number of the most desperate cases.

Veratr., according to Taft: yellowish or bluish face, cold, and covered with a cold perspiration; eyes dull, yellowish, watery; deafness; lips and tongue dry, brown, cracked; difficult swallowing; hiccough; great thirst; vomiting of bile or blood; burning in the stomach; coldness of the hands and feet; trembling and cramps of the hands, feet, legs, and abdomen; diarrhœa, thin, blackish or yellowish; pulse small, scarcely perceptible, intermitting. Great exhaustion; vertigo; fear; despondency; restlessness; loss of consciousness; coma or delirium. According to Angell: after purging from castor oil; vomiting of slime and diarrhœa, sometimes involuntary stools; hopelessness of life. According to Hardenstein: in first stage trembling and jerking of external parts; coldness all over the body.

Ver. vir., intense fever with occipital pains, and vascular and nervous erythism, threatening convulsions, especially in children; development of local inflammations; præcordial distress; vomiting with cold sweat on the face; great and sudden changes in the pulse. (Report of Commission.)

Aside from these remedies we find recommended:

For *nausea:* Apomorph., Kreosot., Hydr. ac., Lobel. infl.

For *nervousness* and *sleeplessness:* Coffea or Bellad., Opium, Daphne ind., Sepia.

For *hæmorrhages:* Plumb. ac., $\frac{1}{50}$ of a grain (Angell), Sulph. ac., Tereb., Millef., Eriger., Lycop., Arnica, Sabina, Secale, Hamam., Thlaspi bursa pastoris.

For *albuminuria:* Euonymin, Helon., Cuprum, Merc. corr.

For *retention of urine*, with delirium and convulsions: Hyosc., Opium, Stramon., Plumbum.

For *difficult urination* and *tenesmus:* Lycop., Tereb., Chimaph., Apis, Apocyn., Prunus spinosa, Cann. ind., Sulphur, Citric ac.

For *cerebro-spinal symptoms:* Glonoin., Corall., Cicuta, Zincum.

During convalescence: Calc. carb., China, Hepar. (Report of Commission, Hardenstein.)

Dengue or Break-Bone Fever.

Dr. R. D. Arnold, of Savannah, says (Identity of Dengue and Yellow Fever, 1859): "The dengue is a milder type of yellow fever, consisting of violent pain of the head and loins, with a sort of rending of the bones of the extremities, of a single fever-paroxysm of variable duration, which terminates into a cutaneous eruption, similar to that of scarlet fever." Dr. Waring, of Savannah, says: "At first the correspondence between yellow fever and dengue would be complete, and each would seem to be preceding to a similar conclusion, when abruptly and without perceptible cause, it appears to sweep the disturbances it has excited into the stomach, and ends in black vomit, while the other precipitates itself upon the skin and eventually in a fugitive inflammation." Zuelzer in Ziemssen's Encyclopædia says: "The name dengue is applied to an acute disease, which mostly occurs as an epidemic in hot climates, seldom sporadically, and the course of which, after a sudden onset or after slight prodromata lasting several days, consists of two paroxysms accompanied by fever, either following immediately one upon the other, or after an intermission of one, two or three days. But the paroxysms are essentially different one from the other; the first is characterized by continuous high fever, reaching its height within the first 12 to 24 hours (temperature 106.7 and 107.6° F., and pulse from 120 to 140 per minute), and numerous exceedingly painful swellings of the joints, which interfere with motion, also, more rarely, by an exanthem. These symptoms subside after two or three days, simultaneously with the sudden outbreaks of a sweat, or epistaxis, or a diarrhœa, which is often critical.

The second febrile stage, which lasts from two to three days, is marked by a remitting fever, and a more or less extensive blotchy or uniform, non-elevated, rose-red eruption and great itching of the skin, also less frequently by swelling of the joints.

The subsequent recovery is gradual, and accompanied by decided desquamation. Its course is generally accompanied by great loss of appetite, restlessness and sleeplessness. More serious brain-symptoms are absent.

The disease attacks all ages and both sexes; with adults it terminates in recovery, with children it is occasionally dangerous. It sometimes leaves behind long-continued and painful swellings of the joints, diarrhœa, emaciation and great debility. Relapses

also occur. It is not yet determined whether the disease is contagious or occasioned by miasmatic influences."

Typhus.

Typhus means literally, *smoke, stupefaction.* In the course of time this word has been used to signify different pathological affections, all of which, however, were characterized by a *dry tongue, stupor, delirium* and *great prostration.* Nowadays it has become *usus* to call typhus only three forms of low fever, namely: the *typhus exanthematicus*, or *petechial typhus*, which is characterized by a peculiar eruption, and the *typhus abdominalis*, or *ileotyphus*, which is characterized by a peculiar diseased state of the small intestines, and in this country best known under the name of *typhoid fever* and *relapsing fever.*

Typhus Exanthematicus, Petechial Typhus.

This form is also known under the name of **Jail-fever, Ship-fever,** or **Camp-fever.** Its immediate CAUSE is unknown; recent authors, however, agree that it is spread by a typhus-germ. Its contagiousness is great, and increases with the duration of closer contact with typhus patients, therefore assistants and nurses in hospitals are much more frequently attacked than the visiting physicians and students; and where many persons are confined to a limited space, *e. g.* in prisons, on shipboard, in camps, etc., the pestilence spreads rapidly to those thus confined. The disease germ is carried by every article which has been in contact with diseased persons, by water, if polluted with excrements from patients, by air, if contaminated with diseased exhalations, etc. Famine, atmospheric and telluric conditions, damp, marshy soil, etc., favor its development. It attacks rich and poor of both sexes and of all ages, but most frequently those between the ages of 20 and 40 years. Ordinarily, it occurs but once in a lifetime. Epidemics have most frequently raged in Ireland, but also in other parts of the globe.

The time of *incubation* varies from a few days to a week and longer, and is attended with various disturbances, none in any way characteristic of the complaint.

The *stadium invasionis* commences in many cases with a severe chill, or with several slight chills, sometimes repeated at inter-

vals during the first day, which are followed by a continuous great heat, amounting already on the third or fourth day to 103° or 104° F. in the morning, and to 104° or 105.8°, rarely to 107.6° F. in the evening. The patient is at once stricken down by a sense of great weakness and debility, and complains of heaviness or pain in the head, which at times is somewhat ameliorated by a spontaneous bleeding from the nose; of vertigo, flickering before the eyes and ringing in the ears. His hearing becomes impaired; his muscles are sore and painful, and on motion his limbs tremble. He lies apathetic on his back, talks deliriously while being awake, or mutters in his sleep. Others, however, are intensely excited, almost wildly, scarcely to be held in bed. With all this we observe various catarrhal affections of the eyes, nose, throat and chest, which latter is the most constantly affected part, manifesting itself by a harassing, rough cough, with a scanty, tough, sometimes bloody expectoration. Auscultation reveals numerous rhonchi. The tongue looks, at this stage, white, with a pappy taste; there is, at times, nausea, vomiting and diarrhœa. This state of things lasts about half a week, when between the third and fifth days, scarcely later than the seventh day, the *second stage*, the *stadium eruptionis et florescentiæ* commences. We now observe the breaking forth of a rash—roseola spots, greatly resembling that of measles—first on the trunk and gradually spreading over the entire body. During the first few days these spots disappear on pressure, later, when exudation of blood-corpuscles or coloring matter has taken place, they fade no longer under pressure; they remain till toward the end of the second week. True petechiæ, on the contrary, are spotted extravasations of blood from the beginning; they remain longer and disappear more slowly, and may reappear after the roseola has gone. The appearance of this eruption does not in the least ameliorate the situation of the patient; on the contrary he grows worse all the time; his sensorium becomes more clouded; he is unable to think, gives slow, incoherent answers, is in constant delirium, either of a mild or raving nature, with constant attempts to jump out of bed and run away. After recovery the patient scarcely ever remembers anything of this stage.

The difficulty of hearing increases; the tongue grows dry, and is covered with a brownish coating, and the respiration, although the cough has lessened materially, is quick and superficial, with increased rhonchi and a dull percussion-sound on the dependent

parts of the thorax. There is almost always constipation at this stage, with involuntary discharge of urine. The heat retains its height to the latter part of the first week, when in *light* cases it generally slackens off a little, and by the seventh day shows an appreciable remission for the first time. In *severe* cases, however, the temperature of the body increases during the second part of the first week, and shows no remission on the seventh day. The spleen is considerably enlarged toward the end of the first week, and the eruption commences to grow more livid with the commencement of the second week. Now the patient lies flat on his back, with his eyes half-closed, and his hands on his genitals, in deep stupor, out of which he can scarcely be roused; he mutters single, unintelligible words, draws faces according to the nature of his ever working imagination, gesticulates, catches at something in the air, or picks the bed-clothes, tries to rise or to put his feet out of bed, in fact, his mind seems to be constantly busy at something, although entirely disconnected with the world around him. He manifests no desire for drink, which, however, is taken when offered, though sometimes with great difficulty, as the tongue is parched and trembling and the swallowing difficult. The teeth and gums are covered with sordes, the nostrils appear blackened as by soot, and the breath exhaled has a terrible smell. By this time the petechial eruption is joined by the breaking forth of a *miliary eruption;* the bronchial catarrh may increase to pneumonia or collapse of the lungs, and a number of cases, even light ones, are complicated with parotitis. The fever increases in all cases with the beginning of the second, may there have been a remission on the seventh day or not. In light cases, however, this aggravation is not very severe, nor does it last more than a few days, while in severe cases it reaches up to 106.8° or even 107.8° F., lasting to the end of the second week, even to the sixteenth and seventeenth day of the disease.

The third stage, or the *stadium criticum*, commences almost always in the latter part of the second week, or, in severe cases, in the first days of the third week. The change sets in remarkably quick, often in one single night, in which the patient at once, after so many sleepless nights, enjoys a deep, quiet sleep, out of which he awakes for the first time conscious again, but without remembrance of what has passed. The temperature has sunk, perhaps, two degrees and the frequency of the pulse, perhaps, twenty to thirty beats per minute; instead of the pungent heat,

the body is in a gentle perspiration and the roseola-spots appear much paler. Now convalescence commences, which goes on, however, quite slowly. The crisis is accompanied by the formation of sediments in the urine, an increase in its quantity, a disappearance of the albumen, and a normal amount of urea and chlorides, though these changes occur slowly. Often recovery is delayed or even frustrated by a renewance of a slow fever, which takes away the last strength of the patient, or other sequelæ retard its progress, among which the most frequent are: inflammation and suppuration of the parotid glands, pneumonia, pleurisy, diphtheritic or follicular inflammation of the intestines, numerous furuncles, ecthyma pustules or large abscesses in the subcutaneous or intermuscular cellular tissue; even thrombi in the veins of the legs and their consequences.

There have been observed light, *abortive* cases of exanthematic typhus, in which it did not even come to an eruption or to an enlargement of the spleen, and where the whole morbid process was finished in two weeks. Loss of hair is not uncommon after an attack of typhus.

THERAPEUTIC HINTS.—See the following chapter.

Typhoid Fever, Typhus Abdominalis, Ileo-Typhus.

This form is also known under the name of *enteric fever, mesenteric fever, entero-mesenteric fever, abdominal nervous fever, pythogenic* (produced by putrefaction) *fever.* Contrary to typhus this fever is never directly transmitted from person to person. It is not like typhus a purely contagious disease, but belongs to the *miasmatic-contagious* diseases. According to numerous observations its poison, though originating in the typhoid patient, is transported and developed in the excrements when they are left for some time to themselves, as in dirty linen (fresh dejections are handled by physicians and nurses with impunity), or still more abundantly when they are collected in privies, sewers, or ground already saturated with organic substances. Thus it seems that the poison, in order to become active, has to go through a certain stage of development outside of the body, where it retains its vitality for a long time. From such beds of developed poison infection can be carried to whole communities by the inhalation of gases arising from sewers, etc., and by drinking water polluted

with excrementitious matter, in which the specific poison of typhoid fever has been developed. Poisoned water can be disinfected by boiling. The *period of incubation* seems on an average about three weeks, though in isolated cases it may be only two weeks, and in others last as long as four weeks. In large cities sporadic cases happen at any season; epidemics of typhoid fever occur most frequently from August to November.

The greatest *individual disposition* to take the disease seems to prevail between the ages of fifteen and thirty years. Children less than one year old are very seldom attacked; after this up to fifteen years the predisposition steadily increases, while after the age of thirty years it steadily decreases. On the whole the disease attacks by preference the strong and healthy; it avoids those already suffering with chronic ailments, and also pregnant and puerperal women, and those who are nursing infants, although exceptions exist. Persons who have passed through the disease once before are not always exempt from another attack, and "real *recurrences*, that is a new attack coming on soon after the first has run its course, and *relapses* before the completion of the disease are often seen." (Liebermeister.)

The principal *anatomical changes* which typhoid fever produces, are: *catarrh in the chest*, even in the finest bronchial tubes; *enlargement of the spleen* to double and even six times its natural size; and *ulceration of the small intestines*. These last, more or less constant, anatomical changes have given rise to the appellation of *ileo-typhus*. Rokitansky distinguishes four stages of this typhoid process upon the mucous membrane of the small intestines.

1. The *congestive state*, by which the whole membrane appears swollen, injected and covered with slime, worse so, however, on its lower portion in the neighborhood of valvula Bauhini.

2. The *state of infiltration*, by which the general redness and swelling gradually disappear and become concentrated to the solitary and Peyer's glands in the lower part of the ilium.

3. The *state of softening*, by which the swelling of the glands is absorbed, or the glands burst and become covered with a dry, crumbly crust, or they burst and discharge their contents without getting covered with a crust.

4. The *state of ulceration*, by which the affected glands suppurate and form the typhoid ulcer. These ulcers are round when originating out of a solitary follicle, and elliptic when originating out of Peyer's plaques; their size varies from that of hemp-seed or

pea to the size of half a dollar. Their basis is the submucous cellular tissue which lines the muscularis of the gut.

The Symptoms and Course of typhoid fever are the following: The patient has generally several days previous to the attack, a sense of general indisposition, weakness and debility, with headache, dizziness and soreness of the limbs, and sometimes repeated attacks of bleeding from the nose, or none of all. The attack itself begins almost always with a more or less violent chill, or repeated chilly sensations, but sometimes without a chill. It is, therefore, not always possible to fix accurately the time of the disease. The chill is followed by heat, which keeps a regular, quite characteristic, typical rise and fall every day for the first three or four days, "rising about 1.8° to 2.7° F. from morning till evening, and falling from every evening till next morning about .9° to 1.3° F., so that on the third or fourth evening a temperature of 104° F. is reached, or a little exceeded. The formula of this ascent is nearly as follows:

First day,	morning:	98.6° F.,	evening:	101.8° F.
Second day,	"	100.21° F.,	"	102.56° F.
Third day,	"	101.66° F.,	"	103.64° F.
Fourth day	"	102.56° F.,	"	104.54° F."

This pyrogenic course in the initial stage of typhoid fever is so decisive a test for its diagnosis, that Wunderlich further says: "If the temperature of the second, third and fourth evenings is only approximatively normal; if the temperature of the first three evenings, or of two of them, is of the same height; if the temperature of two out of the first three mornings is alike; if the temperature of the first two days rises to 104° F. or more; if the temperature retrogrades only once on any of the first four mornings and evenings: in everyone of these cases we may or must exclude typhoid fever from our diagnosis; and contrarily, said diagnosis is the more certain as the course of the temperature of the first four days comes nearer to the above formula."

"Meanwhile, exceptions must not be overlooked. The rise may be completed in two days, or protracted five; both foreboding a severe course, the latter a delay in the favorable turn (crisis or lysis) till the middle of the third week; the temperature may return to normal the second morning, and be succeeded by a greater rise the second evening; the rise of the first and second day being less, that of the third and fourth will be much more;

the height reached the third and fourth day is not always 104° F., but may be a few tenths less or more by a whole degree, 105.8° F. When the typhoid fever is secondary to another disease its initial is obscure, often unrecognizable."

"In the *second half* of the *first week*, and the *first half* of the *second*, the course of the temperature is quite uniform, but cannot help the diagnosis. At this time the maximal height, 104 to 106.7° F., is rarely reached more than once between noon and evening of the fourth or fifth day; meantime the morning temperature is .9° to 2.7° F. lower than the evening's—one remission may be accidentally even lower." (Wunderlich's Thermometry, by Seguin, page 123.)

The course of the temperature during a whole attack may be characterized in this way, that in the *first* week it rises steadily, in the *second* week it is continuous, having the same maximum and minimum every day, in the third week it becomes remittent, showing greater remissions in the morning although the exacerbations in the evening keep still the same height, while in the fourth week the remissions become more marked and the exacerbations gradually lower. (Liebermeister.)

With the temperature rises also the pulse, amounting generally during the first week from ninety to one hundred beats per minute; sitting up, bodily exertion, or mental excitement, is apt to accelerate it considerably, even to twenty or thirty beats.

With all this the patient complains of great weakness and prostration, severe headache, dizziness, flickering before the eyes, and ringing in the ears; his sleep is restless and disturbed by tiresome dreams, sometimes of the same thing over and over again; he calls out in sleep or talks incoherently. When awake he is fully conscious, but indifferent, answering questions slowly and reluctantly. His thirst is great, his appetite gone, and his taste pappy, disagreeable. The bowels are during the first days frequently constipated, but change towards the end of the first week to diarrhœa. There is in many cases repeated bleeding from the nose, and already at this time a catarrhal irritation in the chest. The face is flushed, especially the cheeks look dark red as long as the patient lies quietly on his back, but it turns pale and sunken when he sits up a while. The tongue is soft, flabby, showing the imprints of the teeth, and is covered by a slight whitish fur, which gradually is thrown off, leaving the tongue moist, smooth, and red, as though it were covered with a fine gold-beater's skin;

it soon, however, grows dry. In cases where the tongue is thickly coated, this covering commences to disappear either on the tip and edges, whereby the yellowish-white coating becomes encircled by a gradually broader-growing, deep, red belt, or it disappears at first in the centre, and constitutes that well-known, dry, red streak in the middle of the tongue, which is frequently broader at the point of the tongue, and forms, in this way, a kind of triangle, with its base down at the tip.

The abdomen at this time appears somewhat bloated and is sensitive to strong pressure. A deep pressure upon the ileo-cæcal region may cause a gurgling noise in that region, especially if there be already diarrhœa present. The spleen is swollen, which can be detected by percussing the patient when he lies upon his right side. Finally, there appear toward the end of the first week, single, pale, reddish, lentil-sized roseola-spots upon the epigastrium and adjacent parts of the chest and abdomen.

In the *second week* the temperature of the body ranges between 104° F. and more; towards morning there is only a slight remission, and the pulse grows softer, weaker, and more frequent, from 110 to 120 beats, revealing more or less weakness of the heart. The dizziness increases, the ringing in the ears changes to hardness of hearing, which is generally dependent upon a catarrhal affection of the Eustachian tubes and tympanum. The expression of the face becomes more and more stupid, and the indifference of mind increases. By-and-by the consciousness of the patient becomes clouded and he sinks gradually in a state of somnolence and stupor. Although the tongue is as dry as "chip," yet he utters no desire for drink; takes it, however, when offered, very greedily. When asked to show his tongue, he does not seem to comprehend at first, but finally, with great effort, he brings it forth, pointed and trembling. Stool and urine pass off involuntarily. The patient lies always on his back, and having lost consciousness of all muscular power, the body follows its own weight and the patient slides gradually down in bed, without any effort of his own to change this position. The mental operations are still going on; we see it on the now and then trembling lips, as efforts to speak, and in the low murmuring of unintelligible words now and then. This is *febris nervosa stupida.*

Other patients, although likewise mentally disconnected with the exterior world, neither knowing nor understanding what is going on about them, manifest a vivid, dreamful perturbation of the mind.

They are in constant agitation, throw off the covers, try to get out of bed and to escape, talk loud or lisp some unintelligible words, gesticulate and become angry when interfered with. Their obstinacy in gaining their imaginary ends is sometimes astonishing, when all at once it changes to some other object. In other cases there seems to be no intelligible connection between the constantly-changing phantasmata, with which they seem to be haunted. This agitation of the mind is generally greatest during the night. This is *febris nervosa versatilis.* There are again cases where both of these states make a regular turn; the febris stupida prevailing through the day, and the febris versatilis through the night.

During this week the bowels are almost always loose, owing to the catarrhal affections of the intestines; the cheeks have a brownish-red or bluish color; the eyelids are half-closed; the conjunctiva is injected; the nose is thoroughly dry, and the nostrils are blackened as of soot. On the gums and teeth we observe sordes; the tongue is covered with a brownish crust, which gradually grows black from the admixture of blood; it is stiff, making swallowing quite difficult. The abdomen is inflated like a drum; the spleen has grown still larger, and the roseola-spots have, in some cases, likewise increased, and are joined by numerous *sudamina.* On the chest, physical examination reveals solidification of the dependent parts of the lungs, and far-spread catarrhal affections. There is a less full percussion sound, weak vesicular breathing, fine, bubbling rattles in the dependent parts, and loud rhonchi everywhere else.

The *third week* does not bring any amelioration as yet. The temperature of the body is still on the increase, and the morning remissions are quite indistinct. Only where the case turns favorably, there is in the second half of the third week a decided improvement in this respect. While the evening temperature still rises to 104° or over, the morning temperature shows greater remissions.

The prostration reaches, in this week, its climax; the patient slides down in bed; there is a constant jerking of the tendons; somnolence and stupor are complete, and stools and urine are passed unconsciously, or the urine is retained in consequence of a paralysis of the detrusor vesicæ; the roseola-spots commence to get paler, the sudamina increase more and more, and in some cases there appear petechiæ. To all this associates an erythema

in the region of the sacrum, which, by throwing off the epidermis, is soon converted into a bed-sore—*decubitus*. This is, indeed, the week when the mortality of typhoid patients is the greatest, while in favorable cases its latter part is the turning point. We observe then a gradual abatement of all the above-detailed symptoms. The stupor changes into a natural sleep, consciousness gradually returns; diarrhœa, respiration, pulse, countenance, all improve.

This improvement continues in the *fourth week*, or in some instances commences then, and finally passes over into the state of convalescence. During this time nearly all the patients lose their hair, which, however, is soon followed by a new crop.

This is about the course which a majority of typhoid fever cases run. Besides this, however, there are a number of variations, of which the following are the most important.

The **Abortive typhoid fever** is, in every respect, much lighter, and corresponds to the "*gastric fever* or *nervous fever*" of older writers. Although it shows all the symptoms of a regular typhoid fever, yet they are all much milder; the temperature of the body never reaches such an intensity, and already on the eighth or ninth day there is a considerable morning remission, which sinks at the end of the second or during the third week to a normal state, with only slight aggravations in the evening. Still the patients gain their usual strength quite slowly.

The **Typhus ambulatorius** is a peculiar form, corresponding to the "walking cases" of yellow fever, by which the patient complains only of general debility and exhaustion, but still attends to his business, until all of a sudden he sinks under the signs of perforation of the intestines or intestinal hæmorrhage. In such cases it seems that the poison has localized exclusively in the intestines, without affecting the general circulation.

The **Typhus tumultuarius**, on the other hand, sets in at once so violently that the temperature of the body rises already in the first week to 106° F. and above, and the pulse to 120 and 130; all other symptoms are correspondingly severe, so that the disease reaches its climax towards the end of the first or the beginning of the second week. Such cases are mostly fatal at this early period, or the symptoms grow milder again in the second week, and take then the usual course.

The **Pneumo-typhus** and **Broncho-typhus** are forms in which the poison seems to localize principally in the chest, causing hypostasis of the lungs, pneumonia, or violent bronchitis, while the

characteristic affections of the small intestines are comparatively light, or even wanting.

Cardiac weakness, the result of degeneration of the muscular tissue of the heart, is responsible in part for the tendency to disintegration which is found in all tissues of the body, and is the most frequent immediate cause of death, and consequently "the observation of the pulse is of even greater significance than the observation of the temperature for the prognosis of some cases. So long as the pulse is, in a measure, strong, and its frequency only moderately increased, no immediate danger exists on this side, even when the constant elevation of temperature is very considerable." (Liebermeister.) This degeneration of the heart-muscle exists, to a greater or less degree, in all severe cases without exception.

Parenchymatous degeneratian of the liver is also found in every severe, prolonged and fatal case of typhoid fever, and may reach so high a grade as to present a distinct complication, a group of symptoms characteristic of *icterus gravis* or acute yellow atrophy of the liver. Still, jaundice occurs less frequently during typhoid fever than in pneumonia.

Parotitis begins most frequently during the third or fourth week, is always confined to the most severe cases only, and is a bad prognostic sign.

In still other cases the normal progress of the disease is interrupted by an intercurring *perforation of the intestines*, when the typhoid ulcers eat through the muscularis and serosa of the gut. This is always followed either by a partial or diffuse peritonitis, the symptoms of which compare under the corresponding chapter. The most reliable sign, however, of perforation, during typhus, is *tympanites* or the sudden escape of gas into the peritoneal sac, which presses the liver back from off the thoracic wall, and causes, on percussion, in place of the dull liver sound, a clear tympanitic sound.

Or the natural progress of the disease is interrupted by an intercurring *hæmorrhage from the bowels*. This takes place either in consequence of arrosions of blood-vessels near the ulcers, or in consequence of the bursting of overfilled capillaries. It causes bloody stools, and, if profuse, collapse and a sudden sinking of the temperature, which sometimes restores consciousness for a while, but generally ends fatally, in consequence of the exhaustion which it produces. Less dangerous are the intercurring

profuse hæmorrhages from the nose, which take place sometimes in the second or third week of typhus, and the *hæmorrhages from the womb* in female patients. But as both are the consequence of a highly debilitated state of the system, none of them can be considered as a favorable sign.

Or the whole course of the disease is protracted by the *slow healing process of the intestinal ulcers*. In such cases we find the typhus followed by a low, asthenic fever for weeks afterwards, or in fact there is no cessation of the fever; the sensorium remains clouded; the weakness increases; the emaciation grows excessive; the *bed-sores* enlarge; any part of the body, wherever its own weight rests upon, shows the signs of decubitus. Many of these patients die about the fifth or sixth week, as such a far-spread decubitus alone seems to be sufficient to consume the little strength that is left.

As SEQUELÆ of typhus may be mentioned: neuralgia, partial paralysis, partial anæsthesia, mental disturbances, tabes, anæmia and hydræmia. It is not unfrequent that, during the period of reconvalescence, phthisis pulmonalis is developed.

THERAPEUTIC HINTS.—Agar. musc., constant delirium, attended with attempts to get out of bed, with a tremulous propulsion of the tongue and a general tremor of the whole body. (G. C. Hibbard.) Desire for alcoholic drinks, which are easily borne. It suits well typhoid fever in drunkards. (A. Chargé.)

Alumen, great masses of coagulated black blood pass from the anus in the third week of typhus, with signs of the greatest exhaustion. (Hering.)

Alumina, is often indicated when Bryon., though indicated, does not act deep enough. (Gosewitsch.)

Apis, according to Wolf, in the presence of: apathic conditions, unconsciousness, stupor, with murmuring delirium, hardness of hearing, inability to talk and to put out the tongue, which is cracked, sore, ulcerated or covered with vesicles; difficulty in swallowing, great soreness and bloatedness of the abdomen; constipation, or frequent, painful, foul, bloody and involuntary discharges from the bowels; unconscious flow of urine; dry, burning skin, or partial, clammy sweats; trembling and jerking of the limbs; white miliary eruption on the chest and abdomen, greatest weakness and sliding down in bed; frequently changing, weak and intermitting pulse.

Arnica, stupefied condition; sits as if in thought, yet thinks of nothing, like a waking dream; forgets the word while speaking; confusion of the head; loss of consciousness; delirium; great weakness, weariness and bruised soreness, which compels to lie down, and yet every position feels too hard; unrefreshing sleep, with anxious dreams, talking, and loud blowing during expirations; bleeding from the nose; trembling of the lower lip; dry tongue, with a brown streak in the middle; putrid smell from the mouth; distention of the abdomen; involuntary discharge of feces and urine; pleuritic stitches at every inspiration; great sinking of strength.

Arsen., especially for weak or debilitated individuals, old age and children; in slow, protracted cases, with mild delirium; loss of consciousness; great restlessness and anxiety, manifesting itself in constantly moving head and limbs, while the trunk lies still, on account of too great weakness; picking of the bedclothes; sopor; face distorted, sunken, anxious, hippocratic; lower jaw hanging down; cheeks burning hot, with circumscribed redness; eyes staring, glistening or sunken, dull and watery, or closed with sticky matter; hardness of hearing; lips dry and cracked; lips, gums and teeth covered with brown or black slime; tongue red and dry, cracked; stiff, like a piece of wood; black tongue; speech unintelligible, lisping, stammering, as though the tongue were too heavy; excessive thirst, but little drinking at a time; the fluid rolls audibly down into the stomach; vomiting and retching; burning in stomach and bowels, sensitive to pressure; meteoristic distention of the abdomen; constipation or looseness of the bowels; brownish or watery, bloody, foul, involuntary discharges; involuntary discharge of urine or retention of urine. Voice weak and trembling, or hoarse, coarse or crowing; breathing short and anxious, oppressed, rattling; dry cough; fetid breath. On chest and abdomen roseola-spots; white miliary eruption, even petechiæ; decubitus; excessive prostration and rapid emaciation; pungent, hot, dry skin, like parchment; cold, clammy perspiration, pulse frequent, small, trembling, intermittent. A cadaverous smell scents the whole atmosphere. All symptoms worse about and soon after midnight or noon.

Arum triph., lips and corners of mouth sore and cracked; excessive salivation; saliva acrid; breath very fetid; picking the ends of the fingers with the nails; picking the lips until they

bleed; boring with the fingers in the nose; great restlessness, tossing over the bed, wants to escape while perfectly unconscious of what he is doing, or what is said to him; urine generally suppressed. (Lippe.)

Baptis., "she cannot go to sleep, because she cannot get herself together. Her head feels as though scattered about, and she tosses about the bed to get the pieces together." (Dr. Bell, of Augusta, Maine.) Dull, stupefying headache, confusion of ideas; delirious stupor; heavy sleep, can scarcely be aroused long enough to answer a question, falling asleep in the middle of the sentence; dark red face, with a besotted expression; injected eyes; coated tongue, brown and dry, particularly in the centre, or dry and red; sordes on the teeth; fetid breath; fetid sweat; fetid discharges from the bowels; fetid urine; great debility and nervous prostration; ulcerations; chilliness all day; heat at night; chilliness, with soreness of the whole body. Sensation as though there were a second self beside the patient in bed.

Bellad., during the early stage, especially of tumultuous cases, when there is great congestion to the brain, with great drowsiness, and an inability to go to sleep, and frequent starting during sleep; violent delirium, with attempts to run away, to strike, bite, or spit at his attendants; sparkling, staring eyes; throbbing of the carotid and temporal arteries, and also in the forehead; deafness; burning heat and redness of the face; distortions of the mouth; dryness of nose, mouth, and throat; tongue with red margin and white centre; trembling and heaviness of the tongue, with stammering as if drunk; sore throat and dry cough from bronchial irritation.

Bryon., in any stage when there is delirium, especially at night, about the affairs of the previous day or business matters; visions, especially when shutting the eyes; irritableness; peevishness; easily offended; hasty speech; headache; dull, pressive, or stitching, tearing pains, worse from motion and opening the eyes; eyes dull, watery; hardness of hearing; dryness of nose; lips dry, brown, cracked; tongue coated thick, white, or yellowish, later brown and dry; dry feeling in the mouth, without any thirst or else great thirst, with drinking large quantities at a time; bitter taste in the mouth; nausea; retching; great soreness in the pit of the stomach to touch or motion; bowels constipated; hard cough, with stitching pain in the chest and region of the liver; bronchitis; great lassitude and weakness; wants to lie quiet;

pain in all the limbs when moving; restless sleep, with groaning and moaning, and frequent movements of the mouth, like chewing; eruption of white, miliary rash, with anxiety in the region of the heart; sighing, groaning and moaning, and a peculiar sour smell of the body, with or without sweat.

Calc. carb., according to Goullon, during the aggravations, which precede the outbreak of the miliary rash, about the fourteenth day of the disease: palpitation of the heart, tremulous pulse, anxiety, restlessness, redness of the face, delirium, jerkings, especially in children; short, hacking cough; excessive diarrhœa. Besides this, it may be indicated at the very onset, and then cut off all further progress in persons inclined to grow fat; after great anxiety and worriment of mind; utter sleeplessness from overactivity of the mind; *it is the same disagreeable idea which always rouses the patient as often as he falls into a light slumber;* constant tickling under the middle of the sternum, causing a hacking cough, worse from talking or moving; during coughing, painful shocks in the head; the brain feels hot and burning. (Lippe.)

Camphora, in extreme cases like Carb. veg., only that the symtoms set in much more rapidly. Greatest weakness; cold sweat all over; quickly decreasing temperature, especially of the extremities; small, very frequent, scarcely perceptible pulse; great nervous restlessness of body and limbs; collapse in face; cold, pointed nose and mouth; automatic motions of the muscles; delirium; syncope; snatches of sleep; great thirst, with red, dry tongue; frequent involuntary stools, after much rolling and rumbling in the bowels. (Trinks.)

Canthar., may be indicated by its characteristic urinary symptoms.

Carb. veg., often at the brink of death a saviour, in those states of collapse, dissolution of blood, and paralytic conditions, which seem rapidly to invade the whole organism. All this is indicated by stupor, out of which the patient can scarcely be roused for moments; the eyes are dull, without lustre, and the pupils without reaction against light; the hearing is gone; the face is pale, sunken, hippocratic, cold; there are hæmorrhages from mouth and nose; the tongue is sometimes moist and sticky; other times parched and cracked, heavy, scarcely movable, bluish or pale; the pit of the stomach is bloated; the abdomen meteoristic, with loud rumbling and gurgling of wind in the intestines; there is

colliquative diarrhœa, brownish, grayish, or bloody, of a cadaverous smell, and involuntary. The cough has ceased, and the collecting secretions cause loud, rattling breathing, a sign of beginning paralysis of the lungs; the circulation is without energy; the blood stagnates in the capillaries, and causes cyanotic blueness of face, lips, and tongue; ecchymotic spots here and there; decubitus; the pulse is extremely weak, frequent, small, scarcely perceptible; face and extremities grow cold and become covered with cold perspiration—all signs of beginning paralysis of the heart; in short, the patient offers a picture of complete torpor of all vital functions, thus differing entirely from that of Arsenicum, which is always more or less associated with erethism of the system.

China, especially where there is painless diarrhœa, bloatedness of the abdomen, hæmorrhages, and slowly progressing convalescence after such weakening influences.

Coccul., in such cases which are mainly characterized by a deprimation of the nervous system, showing little or no disturbance in the vegetative sphere of the system, except enlargement of the spleen. There is a slowness of comprehension; he don't find the right expressions for his ideas; what has passed he cannot remember; he talks muttering, mumbling; it costs him great effort to speak the words plainly; and then again for a short while he is very irritable, cannot endure either noise or contradiction, and speaks hastily. Most of the time, however, he sits in silence or feels an unconquerable inclination to sleep; his eyelids are heavy, fall shut, as if paralyzed; the drowsiness may increase to coma. There is dizziness in the head, especially when rising up in bed, with nausea, compelling to lie down again; ringing in the ears; heat in the head and chilliness in the remaining body; pappy taste in the mouth; belching; nausea; distention and rumbling in the abdomen; great general weakness and weariness; great heaviness in the feet; attacks of trembling and jerking of the eyelids, muscles of the face and limbs, and fits of fainting from bodily movement, with spasmodic distortion of the facial muscles. Especially indicated after mental and bodily overexertion.

Colchic., according to Wells, great weakness, as if after exertion. If the patient be raised up the head falls constantly backwards, and the mouth opens to the widest extent. Sudden sinking of the forces, so that in ten hours he can hardly speak or walk; ca-

daverous aspect and extreme prostration; emaciation; lying on the back; comatose; eyes half open; respiration audible and accelerated; hands and feet cold; trunk hot and extremities cold; skin dry; sweating; suppressed, cutaneous transpiration; forehead covered with cold sweat; pulse small and contracted, quick, and hardly perceptible, small and frequent, quick and thready; pulseless; delirium, with cephalalgia; intellect beclouded, though he gives correct answers to questions; unless questioned he says nothing of his condition, which does not seem to him dangerous; perception entirely lost; he is unconscious; eyes hollow, staring and sunken; pupils much dilated and little sensitive to light, or immovable, and but slightly dilated; nostrils dry and black; face sunken and hippocratic; risus sardonicus; lips, teeth, and tongue covered with a thick, brown coating; lips cracked; face covered with perspiration; grinding of teeth; tongue protruded with difficulty; tongue bright red; tongue heavy, stiff and numb; loss of speech; inextinguishable thirst; epigastrium and stomach extremely sensitive to pressure; abdomen distended, tense and hard; surface of the abdomen hotter than the rest of the body; tympanites with pain in the back; watery diarrhœa; the stools are passed insensibly; stools fluid, offensive, with white flakes; involuntary stools; numerous, liquid, dark, offensive stools, with severe pain; secretion of urine suppressed; urine copious; involuntary urination; respiration irregular and intermittent.

Cuprum, according to Baehr, in typhus without high fever, but with excessive weakness, which increases rapidly under the signs of dissolution of blood (nosebleed and petechiæ), until under general paralytic symptoms death ensues.

Fluor. ac., recommended by Hering when there is decubitus.

Gelsem., stage of invasion with sense of extreme prostration; trembling from weakness; muscles refuse to obey the will; pulse slow, but greatly accelerated by lifting or turning the patient; severe pains in head, back and limbs; chilliness, cold hands and feet; crimson flush of face; thick, brown, coated tongue; occasional moisture here and there; sleeps frequently half waking and talking incoherently; head feels "big as a bushel;" vertigo; blind spells; epistaxis; iliac tenderness. (J. C. Morgan.)

Ginseng, loud gurgling noise in the ileo-cæcal tract, dry tongue, heat, delirium on going to sleep. (Liedbeck.)

Hamam., hæmorrhage from the bowels of fluid, dark, fetid blood; great soreness of the abdomen.

Helleb. nig., facies quatrata; stupid expression, though the face is not collapsed; vacant look of the eyes with dilated pupils; constant somnolence, out of which the patient may be roused, but does not gain full consciousness; he stares at the physician, is slow in comprehending and answering his questions; all perceptions by the senses grow only slowly or not at all conscious. The patient utters no desire; when left alone sinks in slumber; he lies upon his back with limbs drawn up; sliding down in bed. Mucous membranes but little or not at all affected; abdomen not bloated, unpainful; no diarrhœa; sometimes unconscious discharge of urine; slow action of the heart; pulse only 80 per minute; respiration slow; temperature of skin nearly normal; no miliary eruption; no sign of putrid dissolution of the blood; loss of flesh trifling; only the brain seems to be the invaded part of the body. (Trinks.)

Hydr. ac., when the drink which is swallowed rolls audibly down the throat, as though it were poured into an empty barrel. (Heynel.)

Hyosc., entire loss of consciousness, and of the functions of the organs of the senses; does not recognize relatives or friends; illusions of the imagination and senses. Delirium which is continued while awake, and which sees persons who are not and have not been present. Indistinct and muttering loquacity; muttering with picking of the bed-clothes; inability to think, the thoughts cannot be directed or controlled; constant staring at surrounding objects, with apparent entire self-forgetfulness; or else great agitation; restlessness; jumping out of bed; attempts to run away, etc. Eyes red and sparkling, staring, rolling about in their orbits; squinting; deafness; distorted face, stupid expression; tongue red or brown, dry and cracked; paralyzed; loss of speech, or indistinct speech; cadaverous smell from the mouth; involuntary or unnoticed stools in bed; suppressed secretion or retention of urine; involuntary discharge of urine, leaving streaks of red sand on the sheet. Paralysis of sphincter ani and vesicæ. Convulsive motions; grating of teeth; jerkings; subsultus tendinum; trembling; sleeplessness, or constant sleep with muttering; coma vigil. Roseola spots on chest and abdomen; cold extremities.

Ignat., great impatience and despair about pains and bad feelings, which he cannot describe; gets easily frightened, and feels as though he were swung to-and-fro in a cradle or in a swing.

Attacks of yawning, stretching, followed by pain in the front of the head, which does not allow opening the eyes; choking sensation from the stomach up into the throat, with oppression in the chest, better from belching; palpitation of the heart; sinking, weak feeling in the pit of the stomach; convulsive motions of the limbs; jerking of the tendons. Sleeplessness on account of various visions as soon as he falls in a doze; troublesome dreams.

Kali carb., intermitting pulse, vomiting, headache, nervous, easily frightened, pale, sickly complexion. (Goullon, Jr.)

Kreosot., typhoid hæmorrhages, with fetid stools, followed by great prostration. (Trinks.)

Laches., fever worse in the afternoon; sweat without alleviation; sleep with following aggravation of all the symptoms; loss of consciousness; muttering; stupor; sunken countenance; dropping of lower jaw; dry, red or black tongue, cracked on the tip and bleeding; in the attempt of protruding it, it trembles; or the tip remains under the lower teeth, and does not come out; dry lips, cracked and bleeding; stools very offensive, whether formed or loose; hæmorrhage from bowels, with flakes of decomposed blood, having the form and appearance of charred straw, in longer or shorter pieces, together with portions more or less ground up; sore throat, with deafness; nasal, indistinct speech; dyspnœa; cough, with slimy, bloody expectoration; after sleeping a short time, terribly restless, tossing about, and throwing the bed-covers off.

Lauroc., clonic spasms of the upper and lower extremities, with paralytic weakness of the limbs; no loss of consciousness. (Trinks.)

Lycop., sopor; delirium; uses wrong words for correct ideas, which he intends to express; fear to be left alone; restless sleep, with outcries and loud laughing; when awaking, exceedingly cross, irritable, scolding, screaming, behaving disagreeably; violent jerkings of the limbs, shaking the whole body, awake or asleep; subsultus tendinum; catching at flocks; sunken face, yellowish, or with circumscribed redness in the afternoon; tongue red and dry; sometimes it is spasmodically thrust to-and-fro between the teeth; lower jaw sunken; bowels much distended, with rumbling and constipation; urine leaves, if voided in bed, a red, sandy stain; cold hands and cold feet; one foot hot and the other cold; wants to be uncovered during heat.

Mercur. may be indicated at the beginning of the disease, when there is: swollen and bleeding gums; fetor from the mouth; pain

in the liver; yellow-green stools; dark urine; bronchitis; icteroid color of the skin. "Obtuseness of mental operations, with great inclination to sleep; heaviness and muddledness of the head; thick and dirty whitish coating of tongue; insipid, pappy, slimy, foul taste, with desire for refreshing things; thirst; painful sensitiveness of præcordial, hepatic, umbilical and ileo-cæcal region; bilious, slimy or watery diarrhœa, which, however, may be absent altogether; prostration; sometimes copious, debilitating perspiration; pale and sunken face and eyes; also dirty yellowish color of the face." (Trinks.)

Moschus, in cases of impending paralysis of the lungs, where the cough ceases and the collected mucus cannot be expectorated; where respiration and pulsation of the heart grow weaker and weaker; where in swallowing, the fluid rolls audibly down the throat, and stool and urine pass off involuntarily.

Mur. ac., febris stupida; constant sliding down in bed, with groaning and moaning in sleep, and muttering and unconsciousness while awake; excessive dryness of mouth and tongue; the tongue is heavy, paralyzed; the patient cannot move it at will, even if conscious; the pulse intermits every third beat; profuse discharge of watery urine; watery diarrhœa; stools and urine involuntary. "Febris nervosa versatilis after Bryon., if the disease still grows in intensity. Continuous delirium, hindering sleep and rest; the patient is all the time occupied with things past and present; he forgets time, place, and all he has said. Vivid hallucinations; the eyes shun the light; the ears are sensitive to slightest noises, and hear sounds—the falling of rain, or music—which do not exist; smell and taste very acute. The eyes glisten; the pupils are contracted; the cheeks reddened; nose, lips and tongue are dry; the tongue is not, or only slightly coated; great thirst; little or no affection of the mucous membrane of the intestines; discharges from the bowels none, or but seldom; urine clear, of acid reaction; pulse very frequent, irritated, without energy, 110 to 130; respiration accelerated; skin mostly dry, hot. Great desire to sleep, without ability to go to sleep; muscular power not very much decreased; slight feeling of weakness and weariness." (Trinks.)

Nitr. ac., in cases of typhoid hæmorrhages; great sensitiveness of the abdomen; green, slimy, acrid diarrhœa; tenesmus; white, coated tongue, with sore spots; inflammatory affection of the lungs, with rattling cough and breathing; brownish, bloody expectoration and irregular pulse; after calomel.

Nuphar, liquid, yellow, fetid stools most frequent between four and seven in the morning.

Nux mosch., profound coma; lying silent, immovable; insensible; difficult comprehension; slowness of ideas; dwells long on her answer, or does not answer at all; very deaf; putrid colloquative diarrhœa; rolling, rumbling and gurgling in bowels; dreamy state, with drowsiness and falling of eyelids; dryness of mouth, tongue and throat, with fulness of stomach and loss of appetite; in the evening the dryness is so great that the tongue sticks to the roof of the mouth, yet there is no thirst. (Hering, confirmed by Nash.).

Nux vom., "in the early stage, if there be chilliness on slightest movement; dryness of the front of the mouth and tip of the tongue; intolerance of impressions on the external senses, all of which seem much exaggerated; great sensitiveness to the open air; thirst, with aversion to water; strong desire to lie down, and considerable relief on doing so." (Wells.)

Opium, febris nervosa stupida; the stupor is complete; he cannot be roused or only with great difficulty; lies speechless, with open eyes and stiff limbs; delirium, mild or furibund, with loud talking, laughing or singing; attempts to escape; congestion to the head; face dark red and bloated; respiration slow, deep-drawn and sighing, stertorous, rattling; constipation or offensive watery diarrhœa; involuntary stools; retention of urine.

Phosphor., pneumo-typhus; violent bronchitis and even hepatization; hard, dry cough with tightness in the chest; or loose, rattling cough, with tough, transparent, or thick, yellowish, or reddish expectoration; cough worse from evening until midnight; vomiting of watery, bilious, and slimy masses with great pain; frequent, unpainful diarrhœa, with meteorism and loud rumbling; the discharges are watery, greenish, grayish, or black from decomposed blood; great weakness after each discharge; numerous roseola-spots, ecchymosis, and miliary eruption on the trunk; great heat of the trunk, with cold perspiration on head and extremities. "Rapid sinking of strength; very quick, small, thread-like pulse; stupor; unconsciousness; sopor and stupefaction; delirium and flaccilegium; hardness of hearing; dull, half-shut eyes; hippocratic face; lying on back; dry, immovable tongue, covered with black crusts; very sensitive abdomen, painful to touch; rolling and rumbling in abdomen during and after drinking; rattling in windpipe; impending paralysis of brain and collapse; burning pain in the brain." (Trinks.)

Phosph. ac., complete apathy and indifference; don't want to talk; answers slowly and reluctantly, or short, incorrectly; stupid sleep from which he may be roused, when he answers correctly, but soon falls asleep again; stupor; stupid and indifferent expression of the face; bleeding from the nose; meteoristic distension of the abdomen, with a great deal of rumbling and gurgling, and unpainful, watery, grayish diarrhœa, also involuntary stools; great debility; relaxed pale skin; ecchymosis; bluish-red spots on the parts which the patient lies upon; decubitus; temperature of the body not high; constant, sticky, or profuse sweat; pulse weak and small, frequent, and intermitting. "Dryness of the mouth and throat; gray-whitish coating of the tongue; the patient slumbers even in daytime, with murmuring delirium; the eyes are dim, sleepy; the skin remains dry or clammy; a miliary rash appears first about the neck, then upon the back, then on the chest, etc., at last upon the feet." (Trinks.)

Psorin., retarded convalescence from profuse perspiration; patient hopeless and despairing of recovery; extreme prostration. (Hering.)

Pulsat., at the early stage where external heat is intolerable, causing a sense of heat with distress; uncovering, however, is followed immediately by a chill; or there is heat only of one side, or heat of one side with coldness of the other, or sweat of one side; there may be great drowsiness; delirium; frightful visions; dry tongue, as if burnt, and yet no thirst; rumbling in the bowels and diarrhœa, with pinching pain, worse at night; pulsating in the epigastrium.

Rhus tox., mental operations are slow and difficult; he answers correctly but slowly, sometimes hasty; delirium; talks much to himself, or talks incoherently, without any seeming connection of ideas; headache; worse from opening and moving the eyes; bleeding from the nose, especially after midnight; the lips are dry and covered with brown crusts; the tongue is red at the tip, in the shape of a triangle; the bowels are loose, worse at night; involuntary alvine discharges during sleep. There is often severe cough, with tough, bloody expectoration; bronchitis; pneumonic infiltration of the lower lobes of the lungs; severe rheumatic pains in the limbs, worse in rest; somewhat ameliorated by moving and changing position; constant restlessness; tossing about; restless sleep, with frightful dreams, and frequent waking, and never that state of quiet, profound coma; dry heat or sweat, dur-

ing which the patient desires to be covered; roseola spots; miliary eruption; great exhaustion.

Secale, large purple spots on the body, particularly on the feet; body cold, especially hands and feet, and would not be covered; cold perspiration, mostly on face and forehead; copious vomiting of thick, black bile, mixed with mucus. (Lippe.)

Silic., sometimes in the very worst cases, with excessive debility, profuse perspiration, and a strong desire to be magnetized; magnetizing relieves the great weakness, and Silicea promotes the forming of abscesses, boils, etc., thus throwing the poison to the surface, and securing a gradual though slow recovery.

Stramon., loss of consciousness; imbecility; stupefaction of the senses; delirium; hallucinations; singing; laughing; whistling; screaming; constant, involuntary, odd motions of the limbs and body; spasmodic distortions of the face; staring look; wrinkled skin on forehead; loss of sight, hearing and speech; all objects appear oblique to him; inner mouth feels raw and sore, or is ulcerated; red rash upon the chest; blackish diarrhœa every hour; stools smell like carrion; suppressed secretion of urine; retention of urine; copious, involuntary discharge of urine. Febris nervosa versatilis.

Sulphur, when in psoric individuals the well-selected remedy has no or only a superficial effect; besides, if there be sleepless nights; slow comprehension when being asked; heat and fulness in the head; chronic sore and inflamed eyelids; great dryness of the ears; pale, sickly aspect; bright, red lips; undefined redness on the tip of the tongue; bleeding from the nose, teeth and gums; offensive smell from the mouth; diarrhœa, worse early in the morning, unpainful or with tenesmus; great prostration after stool; offensive urine; catarrh and inflammation of the lungs, especially during commencement of infiltration, recognizable by the crepitation sound.

Tarax., during rest intolerable tearing pains only in the lower extremities (Rhus tox. has such pains in all the limbs); constant muttering to himself, similar to that of Hyosc.; violent, tearing pain in the occiput; great chilliness after taking anything to eat or drink. (v. Boenninghausen.) Map-tongue.

Tart. emet., in pneumo-typhus, with great rattling in the chest, dyspnœa, etc.; symptoms of œdema pulmonis.

Tereb., bloody urine.

Veratr., during cholera epidemics; great prostration; cold

sweating; coma; vomiting and watery diarrhœa; bluish face; pointed nose; wrinkled skin.

Ver. vir., constant talking and muttering unintelligibly, with open eyes; squinting; ocular conjunctiva injected, secretion of yellow mucus at inner canthus; nightly agglutination; face pale, with cold sweat; boring occiput into pillow, jerking head backward, sometimes forward. Pupils dilated; dropping of lower jaw; corner of mouth drawn down on left side; champing teeth; tongue coated white; *red streak down the centre;* beating of heart when turning over in bed, shaking left side of thorax; pulse irregular; urine dark and turbid, fetid, involuntary; great restlessness; constant moving, thrusting out one leg, then drawing it up; position on back with thighs flexed on pelvis; carphologia; picking at bed-clothes; subsultus tendinum, like galvanic shocks; twitching of facial muscles. (G. W. Sherbino.)

Zincum, staring eyes; delirium with attempts to get out of bed; complete unconsciousness; lying on the back and sliding down in bed; grasping at flocks; subsultus tendinum; constant *trembling of the hands* and *coldness of the extremities;* relaxation of the muscles of the face; hippocratic face; pale, waxy complexion of the face; decubitus on the sacrum and trochanter; frequent, involuntary discharges from the bowels; frequent, small, intermitting, scarcely perceptible pulse; impending paralysis of the brain.

GENERAL HINTS.—In predominant *cerebral* symptoms, compare: Apis, Bellad., Bryon., Cuprum, Hyosc., Laches., Opium, Stramon., Zincum.

In predominant *abdominal* affections: Apis, Arsen., Bryon., Carb. veg., China, Colchic., Ginseng, Mercur., Nux vom., Phosph. ac., Rhus tox., Secale, Sulphur, Veratr.

In *pneumo-typhus:* Apis, Bellad., Bryon., Mercur., Phosphor., Pulsat., Rhus tox., Sulphur, Tart. emet.

In *febris nervosa stupida:* Arnica, Arsen., Carb. veg., Coccul., Hyosc., Laches., Mur. ac., Phosph. ac., Rhus tox., Secale.

During convalescence, when there is too great hunger: Pulsat.

Diarrhœa, with cutting in the bowels after sour things: Ipec.

Overexertion of the body: Rhus tox.

Fright: Ignat.

Chagrin: Nux vom.

Loss of memory: Anac.

Complaints, which go from above downwards: Selen.

When commencing below and spreading upwards: Guaco.
Protracted convalescence: Psorin.

Relapsing Fever, Typhus Recurrens.

This fever has been described as early as 1741 by Rutty, by Barker and Cheyne from 1816–21, still later by Griesinger, Wunderlich and many others. Epidemics of the same have prevailed at different periods in Ireland, Scotland, England, Germany, Africa and North America. Some of these epidemics were intermingled with other forms of typhus, were often widely spread, and at times preceded or followed by epidemics of intermittent fevers. But also single cases have now and then been observed, and in London the fever seems to have become stationary.

If yellow fever is essentially a fever of *one* paroxysm, the relapsing fever consists in the majority of cases of *two* (seldom more) paroxysms, which are separated by an interval of comparative health, lasting from four to seven or to fourteen days. This long remission made the second paroxysm appear like a relapse of the disease, wherefore the name "*relapsing fever*" was applied to it by English physicians.

It is as contagious as typhus enanthematicus, and because *Obermeier* discovered protomycetes in the blood of patients with relapsing fever, some consider these spinal filaments, which, according to Lebert's, Weigert's and Buchwald's observations, are never absent during the periods of invasion and relapse, as the doers of all the mischief, by which infection is brought about through the media of contact, air or water.

The Symptoms of typhus recurrens are the following. Mostly in the morning, or in the middle of the day, less frequently in the evening or night, the patient is, in many cases without any premonitory signs, suddenly attacked with high fever, which may or may not be preceded by chilliness or a severe chill. The temperature rises rapidly to 102.2° F. in the morning, and to 104° F. in the evening, in a few days to 105.8° in the morning, and to 107.6° F. in the evening. The pulse amounts to 108 or 112 in the morning, and to 120 and over in the evening. In spite of this high temperature the skin is usually moist. At the same time the patient experiences severe headache, and severe pain in the limbs, joints and loins; in fact, all the muscles of the body are the seat of severe pain, especially the calves; there is dizzi-

ness, congestion towards the face, sensitiveness to light and noise, restlessness and sleeplessness at night, loss of appetite, bad taste in the mouth, thickly coated tongue, later dry, nausea, vomiting, and intestinal catarrh. On the second day already the patient complains of heaviness in the upper part of the abdomen, and of pain in the left hypochondrium; the spleen begins to swell and rapidly increases in size, and so does the liver. There appears at times a miliary rash, and herpes facialis, which latter are never observed in typhus fever. Bleeding at the nose is rare, and delirium is not a frequent symptom. But the loss of strength is rapid, and emaciation goes on progressively. Thus the disease increases all the while for five, six or seven days, producing sometimes at the very height a deadly paleness of the face and lips, when all at once, with the appearance of a profuse sweat, a remission sets in, that is truly astonishing. The pulse sinks within a few hours, in many cases within two or three days, to 88, 60 or still lower per minute, and the temperature decreases some five, six, even seven degrees in the same time. With this remission of the fever, also all the other symptoms above described cease, and the patient, although still very weak, feels comparatively well. In some cases, however, where the remission does not take place so suddenly or so completely, the patient experiences even during this apyrexia severe pains in the limbs, and now and then some febrile aggravations. Yet, nevertheless, the whole process looks to any one unacquainted with the character of the disease entirely as a state of convalescence. This interval of freedom from fever lasts for about four, seven or fourteen days, when the relapse begins unexpectedly, sometimes in the forenoon, or afternoon, but most generally at night. This new paroxysm is quite similar to the first. After a chill or mere chilliness, or neither, the temperature rapidly rises again to 102.4° F. and over, and the pulse to a frequency of from 112 to 120 or more. With this rise, all the other symptoms set in again: feeling of great malaise, vomiting, violent pain in head and limbs, swelling of the spleen, etc. This second attack is usually somewhat milder than the first, lasts in favorable cases from two to four days, when again a sudden cessation of the fever and of all the other symptoms takes place, which leads either to complete convalescence or is followed, though only in exceptional cases, after the lapse of several days by a third, or even a fourth, much milder attack. Recovery, even in favorable cases, is generally slow; it takes a great while

before the patient recuperates the lost strength, and he experiences often for a long time severe pain in the limbs, while in other cases it is followed by various ailments.

Not all cases, however, take so favorable a course, especially if they take the form of a *bilious typhoid*, or *typhus biliosus*, which by some authors is considered as a distinct disease. In severe cases the second paroxysm does not terminate in sweat, may be not even the first one, but the symptoms keep on increasing until they assume the character of the gravest form of typhus. There is great prostration, stupor, delirium, hardness of hearing, dry, brown tongue, involuntary discharges from the bowels, sometimes continual vomiting, jaundice, coma, convulsions, and death. In other cases death takes place unexpectedly during a short apyrexia by a sudden collapse with vomiting. In some epidemics the remission is very inconsiderable and the second paroxysm appears almost as a continuation of the first; or there is indeed no remission at all, but a continuous fever lasting from three to four weeks. Or, instead of the *first* paroxysm being the strongest and longest, it happens that the *second* is by far the most severe. Often there has been found at the height of the paroxysm, when the sweat appeared, a sudden eruption of miliaria; also, especially when petechial typhus was prevalent at the same time, roseola eruptions and a spotted appearance of the skin. Quite unlike to other forms of typhus, febris recurrens frequently produces herpes facialis. Icterus has frequently been seen in some epidemics, in others less frequently, and in still others not at all. The liver now and then shows a moderate swelling and some sensitiveness. Peculiar is the great hunger in some cases, which the patient experiences during the height of the disease, and in other cases the continual vomiting of grass-green fluid, or the copious bilious diarrhœa. Dysentery has been observed in a great many cases either as a complication or a sequela of the disease. The second paroxysm is now and then attended with urinary difficulties, even cessation of the urinary secretion.

There are also *hæmorrhages* to be noticed, which may take place from the *nose* either at the commencement or at the end of the first paroxysm; or from the *mouth*, *stomach*, *intestines*, *bladder*, or beneath the epidermis as petechial effusions, in very severe cases which are generally complicated with a high degree of icterus. Decubitus, gangrene, parotitis, erysipelas are only occasional occurrences. An attack during pregnancy frequently causes abortus, which, however, has only seldom proved fatal.

As SEQUELÆ have been mentioned: abscesses, furuncles, parotitis, and laryngeal affections; anæmia; palpitation of the heart; pain in the limbs; œdema; hydrops and albuminuria; tuberculosis; diabetes; paraplegia; loss of speech; amaurosis; mental derangements.

DIAGNOSIS.—The distinguishing feature of *febris recurrens* in the first week is *the extreme high temperature of the body* and *great frequency of the pulse*, which, however, show marked daily remissions in the morning, a temperature which cannot be explained in the total absence of any local affection. *There is in short no corresponding relation between the intensity of the fever and the intensity of the attending symptoms.*

Abdominal typhus scarcely ever, except in the worst cases, attains in the first week such a height of temperature; scarcely ever takes such a rapid beginning; and never shows such a rapid remission of fever.

Petechial typhus shows mostly about the sixth day the roseola-exanthema and never such a sudden remission of fever about the end of the first week.

The PROGNOSIS differs essentially in different epidemics; some are severer than others. It is stated that the mortality in febris recurrens amounts from three to four per cent., scarcely ever to six or eight. The fatal issue takes place mostly in the second, but frequently also at the height of the first paroxysm by a rapid collapse. Other patients die with uræmic symptoms, sudden convulsions, coma and collapse, and still others lie for several days in a profuse perspiration, which is followed by collapse.

THERAPEUTIC HINTS.—There are mentioned: Arg. nitr., Arsen., Bryon., China, Eupat. perf., Nux vom. Compare Typhoid and Intermittent Fever.

The Plague.

This disease has been raging epidemically at different periods in the Eastern countries. Europe has been free from it since 1841. It is, according to Liebermeister, like typhoid fever, a *contagious-miasmatic* disease, that is, it is not transmitted directly from person to person, like typhus exanthematicus or small-pox, etc., but almost exclusively in an indirect manner through clothes and other effects. The contagiousness is greatly enhanced by

deficient ventilation of the streets and houses, by the crowding together of many individuals into a small space, and by uncleanliness.

The stage of *incubation* is given at from two to seven days, but the capability of the plague poison to live outside of the human body seems under certain conditions to extend over several years.

Its stage of *invasion* begins suddenly, with bodily and mental weakness, headache, dizziness, pale and flabby face, distorted features, languid eyes, awkward speech, staggering gait, without fever, exhibiting the picture of an intoxicated man. Sometimes it is attended with vomiting and diarrhœa, and lasts from a few hours to one or more days.

The *second stage* is characterized by an intense fever, which is introduced by chilliness or by a well-marked chill; the pulse is very frequent and the respiration accelerated. The patient soon passes into a well-formed typhous condition, with wild or mild delirium, stupor and coma, dry, cracked tongue, sordes on teeth and lips, soot-colored crusts in nostrils, cardiac weakness, feeble, small, irregular pulse, sometimes cyanosis of the lips. This stage may continue for two or three days, when

The *third stage* commences with the appearance of *buboes*, usually attended with a diminution of the fever, the breaking forth of a sticky, strongly smelling sweat, a lowering of the pulse and the returning of consciousness. The buboes occur oftenest in the inguinal regions, but also in the axillæ or on the neck, but as a rule, only in one of these regions at one time. They are sometimes quite small; in other cases they attain the size of a hen's egg or even larger. Their suppuration is considered as favorable; in other cases the tumors become resolved.

Besides buboes there occur in some cases *carbuncles*, usually on the lower extremities, also on the buttock and on the back of the neck. Petechiæ, vibices, or extensive ecchymoses appear only in the severest cases shortly before death.

"*Convalescence* begins generally between the sixth and tenth day, and is often protracted by continuous suppuration of the buboes. Among the SEQUELÆ should be enumerated parotitis, furuncle, abscesses of the skin and muscles, pneumonia, protracted fever with continued typhous condition, dropsy, partial paralysis, mental disturbances, etc. Genuine relapses may also take place." (Liebermeister.)

Death can occur during any stage of the disease. The mor-

tality of plague is greater than that of any other epidemic disease. But the different epidemics vary greatly in this respect.

THERAPEUTIC HINTS.—In the August number, 1879, of the *North American Journal of Homœopathy*, page 63, Dr. Hering says: "Lorbacher proposes as the main remedies for the plague: **Laches., Arsen., Carb. veg., Chin. sulph.** and **ars., Phosphor., Secale** and **Anthrac.** We may mention here our proving of **Badiaga**, which might be considered a remedy against the plague. What **Laches.** will do is uncertain. Still more uncertain is **Arsen. Chin. ars.**, not being proved, we may leave aside altogether. **Secale** is another drug only known by poisonings. **Anthrac.** very likely will be of great importance in the plague. **Kali phosph.**, proposed by Raue, we permit ourselves to mention as very promising. **Stramon.** has more similarity to the plague symptoms than Bellad.; and **Silic.** more than **Hepar. Loimine**, a preparation of the pus of the plague, brought here by Dr. Theuillé, has cured cases of the greatest importance; one with suppurating swellings along both sides of the neck, and cured them permanently."

EXANTHEMATA.

Measles, Morbilli.

Measles are contagious, and more so during the stadium prodromorum et eruptionis than at a later period. The nature of the poison is entirely unknown. Only this much is certain, that it regenerates itself in the infected person, impregnates the surrounding atmosphere, and that it may be carried from there to other quarters. Measles prevail therefore mostly as epidemics, in preference, it seems, during those months which favor catarrhal affections. As a general rule they attack a person only once in life, and children more than grown persons, although there are many exceptions. Also relapses occur sometimes after a few days or a few weeks. The time of incubation varies from one to two weeks.

The eruption of measles consists of numerous, roundish, lentil-sized red spots, which are a little raised above the level of the surrounding skin and generally contain in their centre a little papule. The closer they appear the more they coalesce, and in this way form irregular-shaped plaques, while on places where

they are scarce they stand isolated. Between these spots the skin retains its normal color; on the face, however, it is usually somewhat œdematously swollen. Even in cases where they appear so abundantly as to coalesce (*morbilli confluentes*) they do not present an evenly diffused redness, but always a spotted appearance. There are cases in which the hyperæmia of the skin results in an extravasation of blood, causing the eruption to assume a dark, blood-red appearance, and petechial spots to appear between the eruption; this form is called *morbilli petechiales* or *hæmorrhagici*, or *rubeolæ nigræ*. The measly redness disappears under the pressure of the finger and reappears again after removing the finger, from the *middle towards the periphery*, contrary to scarlet fever redness, which reappears from the periphery towards the centre. Measles are always more or less accompanied by catarrhal affections of the eyes, nose, larynx and bronchial tubes, even by pneumonic symptoms. The blood is, like in other infectious diseases, poor in fibrin and of a dark color.

The course and progress of measles is as follows:

The first stage, or the *stadium prodromorum*, consists in a seemingly simple cold in the head and chest. There is chilliness and feverishness, and the temperature increases rapidly to 102° or 104° F., but lessens again considerably on the next day; there is headache, sensitiveness to light, watery eyes, watery discharge from the nose sneezing, nosebleed, hoarseness and cough, which latter sometimes assumes a croupy nature. Only in exceptional cases these symptoms amount to any considerable severity, and may then be associated with vomiting, delirium and sopor; in the majority of cases, however, the little patients do not mind them, but run about. On inspection of the fauces we observe that about the third day of this premonitory stage the identical eruption of measles has already made its appearance in the form of single, lentil-sized red spots upon the roof of the mouth and the palatal mucous membrane, some twenty-four or twelve hours before there is any sign of an eruption on the external skin. This accounts at once for all the catarrhal symptoms, and for the fact that measles are already transmitted at this early stage from child to child by the mere breath.

The second stage, the *stadium eruptionis*, begins on the fourth or fifth day and is marked by an exacerbation of the fever; the temperature of the body rises again, averages during the height of the disease about 104°, and may, in severe cases, reach even

105.8 F. During this time it happens occasionally that convulsions set in. The eruption appears first on the face and spreads gradually downwards over the whole body. There is now a peculiar measle-smell, scenting the whole atmosphere of the patient. In anomalous cases the eruption appears at first on the arms; in others it stays confined to single portions of the body, and in still others there is no eruption at all (*morbilli sine exanthemata*), although all the other symptoms and the previous exposure to the contagion leaves no doubt as to the nature of the disease. The stadium eruptionis generally is completed in twenty-four to thirty-six hours, although in some cases it lasts three, even four days, in which cases the first spots already disappear when the last come out. During this stage diarrhœa often sets in, and the catarrhal affection generally reaches its acme, but in malignant epidemics death may ensue in consequence of general paralysis and adynamia already at this early stage. In such cases the pulse grows weaker and weaker; the cutaneous capillaries burst and cause hæmorrhages within the cutis; the prostration of strength is excessive and the patient sinks into a typhoid condition.

The third stage, the *stadium florescentiæ*, is blended with the eruptive stage. In usual cases, already twenty-four hours after its full development, the redness commences to grow paler, and with it all the other symptoms, heat and catarrh, gradually grow milder. Such normal cases are termed *morbilli vulgares, simplices* or *erethici.*

In other cases the measle-spots grow darker, assume a purple color, and remain visible upon the skin for five or six days. The dark coloring of the eruption is owing to the rupture of the cutaneous capillaries, and for this reason the redness does not disappear under the pressure of the finger. The whole morbid process approaches that of other inflammatory processes. The heat rises above 104° F.; there is throbbing of the carotid arteries, palpitation of the heart, and a full, strong pulse; the catarrhal cough not unfrequently changes into a croupy cough, and there may exist a complication with lobular pneumonia, or the catarrhal affection extends upon the alimentary canal and causes vomiting and diarrhœa. This state of things may augment to complete prostration and collapse; then the eruption disappears from the skin, and such a condition is not without danger. This form of measles has been termed *morbilli inflammatorii*, or *synochales.*

A still other form is that which has already been alluded to in the second stage. It is characterized by general adynamia and torpor. The eruption remains visible only a short time, is either pale-reddish or purple, and frequently interspersed with petechiæ. It is often combined with profuse bleeding from the nose; the pulse is very frequent and scarcely perceptible, and the patient sinks into sopor and collapse. This form is called *morbilli asthenici, nervosi, torpidi,* or *septici.*

The fourth stage, the *stadium desquamationis,* commences in simple cases usually about the eighth or ninth day of the disease. The measle-spots have at this time entirely disappeared, and in their places we observe a gradual loosening of the epidermis, which is thrown off in the form of fine scales. This process can best be observed on the face and hands, while on the parts covered, the loosened skin is rubbed off before it is noticed. This stage is rarely interrupted by dangerous complications; still, it may become complicated by croupous laryngitis or pneumonia. Noma or mortification of the labia pudenda is of very rare occurrence.

As SEQUELÆ of measles are mentioned as quite prominent, chronic, catarrhal cough, and chronic pneumonia, which may end in consumption. Besides these, a number of scrofulous affections, such as chronic inflammations of the eyes, otorrhœa, glandular swellings, and chronic inflammations of the periosteum and of the joints. It is but just to remark that under homœopathic treatment sequelæ are of very rare occurrence.

THERAPEUTIC HINTS.—The bed-room should be kept of an equal temperature at about 65 or 66° F. It ought to be aired frequently with care. The light in the room should be modified according to the patient's own desire. If he wants to drink, he may have cold water, he may eat fruit provided his bowels are not disordered. When the fever, catarrhal irritation and desquamation have passed off, he should have a warm bath, and on the following day a cool wash all over, taking care that it be done quickly, and that the patient be well rubbed and dried by flannel afterwards. From this time he may be allowed to go into the fresh air, provided the weather allows it.

Acon. is the very remedy at the beginning, because it corresponds to all the symptoms of usual cases—full, quick pulse; dry, hot, burning skin; fever; restlessness; catarrhal irritation from

the eyes down into the bronchial tubes; nosebleed; dry, hacking, or even croupy cough; stitching pains in the chest; restless sleep, with jerking and starting; grating of the teeth, moaning and groaning, or sleeplessness with great agitation and anxiety; pain in the stomach and bowels, with vomiting and diarrhœa.

Ant. crud., pain in the ears; white, coated tongue; gastric derangements.

Apis, confluent eruption and œdematous swelling of the skin; greatly inflamed eyes; croupy cough; violent cough, similar to whooping-cough; catarrh of the bowels, with diarrhœa; prostration, muttering and delirium.

Arsen., in adynamic cases. Persistent burning heat of the skin; frequent, quick and small pulse; great anxiety; restlessness; palpitation of the heart; too early or sudden disappearance of the rash; pale, earthy color of the face; bloatedness of the face; thrush in the mouth and fauces; constant craving for cold water, with but little drinking at a time; vomiting and diarrhœa; great sinking of strength; all worse about midnight.

Bellad., may be indicated as often as Acon. in the commencement, if there be heat with moisture of the skin, quick, but soft pulse; constant drowsy sleep, or drowsiness with inability to go to sleep; congestion to the head; injected eyes; thick, white-coated tongue; sore throat, even diphtheritic; hollow, barking, croupy cough; jerkings of the limbs; convulsions.

Bryon., by slowly forthcoming eruptions and inflammatory affections of the chest; dry, painful cough, constipation, etc.

Camphora, in those dangerous cases where the face grows pale and the skin cold, assuming a bluish, purple color, with utter prostration and spasmodic stiffness of the body. Also in different after-complaints, especially painful and difficult micturition.

Carb. veg., persistent hoarseness after measles.

Chamom., painful, watery diarrhœa, in consequence of taking cold.

Coffea, nervous, restless agitation, preventing all sleep; short, dry, hacking cough.

Cupr. ac., measles, bronchitis, delirium, wants to go home; expectoration only during the night. (J. C. Morgan.) On falling asleep, begins to talk, scold, turn, twist and scream; on being aroused, was perfectly rational, tongue and mouth red. (J. F. Miller.)

Drosera, cough, with drawing together of the epigastrium, simi-

lar to whooping-cough, also paroxysms of cough after measles, worse in afternoon and evening, even when attended with bloody and purulent expectoration.

Euphras., streaming of hot, burning tears from the eyes, with great photophobia; profuse running from the nose, without burning; cough only during the day.

Gelsem., after Aconite, great deal of coryza; drowsy with fever heat, no thirst. When the eruption turns livid, with cerebral symptoms.

Hepar, croupy cough, with rattling in the chest, but without expectoration; worse in the morning.

Ipec., tardily forthcoming eruption, with oppression of the chest; tickling cough and vomiting.

Kali bichr., flowing of water from the eyes, with burning when opening them; pustules on the cornea; stitches in the left ear extending into neck and head, with swelling of the glands; watery discharges from the nose, with great sensitiveness and ulceration of the nostrils; thirst, with dryness of mouth and tongue; watery diarrhœa, followed by tenesmus; loud, rattling cough, with stringy expectoration.

Laches., livid eruption, countenance almost black, tongue coated dark brown, sordes on teeth, inability to protrude the tongue. (J. F. Miller.)

Mercur., diarrhœa, with pain in the bowels and tenesmus; moist barking cough, without expectoration; the cough is almost convulsive and cannot be controlled, occurring in frequent paroxysms, particularly from 9 A. M. till 5 or 6 P. M. (C. Wesselhoeft.)

Nux vom., after previous use of drugs; nose stopped up; cough dry in the evening and loose in the morning.

Phosphor., in complication with bronchitis and pneumonic symptoms; tightness across the chest, with a dry, tight cough; worse from evening until midnight; unpainful diarrhœa.

Pulsat., inflammation of the eyes and photophobia; thick, yellow discharge from the nose; dryness of the mouth, without thirst; nightly diarrhœa, after previous rumbling in the bowels; rattling, loose cough, with expectoration of thick, yellow mucus; increase of all the symptoms towards evening; chronic, loose cough after measles.

Stramon., sometimes before the outbreak of the eruption, if there be frightful visions of rats, mice, etc., at which the patient is

startled and from which he tries to hide; spasmodic affection of the œsophagus, hindering swallowing.

Sulphur, either during the first stage, when the eruption makes a tardy progress, or for after-complaints, such as chronic coughs, originating in remnants of partial pneumonia; chronic diarrhœa; hardness of hearing; chronic discharge from the ears.

Veratr., pale, livid color, and tardy appearance of the eruption; hæmorrhages without amelioration; burning heat with alternate cold extremities; very frequent, weak, intermitting pulse; delirium; restlessness; drowsiness; apathy.

Ver. vir., during febrile stage, especially if pulmonary congestion is impending; red streak down the centre of tongue; convulsions before eruption.

Scarlatina.

Scarlet fever is characterized by the following features:

1. An *eruption* of the skin due to hyperæmia, with numerous and closely aggregated red points about the size of a pin's head, in normal cases equally distributed over the whole surface of the body. These scarlet points are either flat or slightly elevated, and as the hyperæmia increases, the vividly red points, originally isolated, gradually become confluent, and the exanthem assumes a uniform, intense redness, with turgescence of the skin, which appears stretched and glistening (**Scarlatina lævigata**). In other cases the eruption is but *partial*, or it may assume the shape of large *roseola* spots, from the size of a lentil to that of a bean, and of various shades of color, when it is called "**Scarlatina variegata.**" Or the œdema of the skin is more considerable, and marked by a punctate injection in the form of small but numerous papules, which can be better felt than seen—**Scarlatina papulosa.** Or in the further development of the papular form, miliary vesicles, about as large as a millet seed, with turbid contents, may appear on all parts of the body, but chiefly on the trunk—**Scarlatina miliaris.** Or the hyperæmia may be so intense, that under the influence of a hæmorrhagic diathesis, exudation of blood into the superficial layers of the skin, into the subcutaneous cellular tissue, into the miliary vesicles, and even hæmorrhages from internal and mucous membranes may occur—**Scarlatina hæmorrhagica.** The scarlatinous exanthem is sometimes accompanied or followed by other forms of cutaneous disease, such as herpes labiales, acne, urticaria,

pemphigus, ecthema, varicella-like and pustular eruptions, sudamina, boils, and in septic conditions even gangrene of the skin and the subcutaneous cellular tissue.

2. An *angina* which consists in mild cases of a uniform redness of the fauces, associated in more intense forms with swelling of the mucous membrane, enlarged follicles and tonsils in variable degrees. In still graver forms the mucous membrane is of a dark, livid color, greatly swollen, with abundant secretion, at times making deglutition considerably difficult, or impossible, the fluid taken regurgitating through the nose; the tonsils are also greatly enlarged and prone to suppurate. In the severest cases (angina maligna) there is parenchymatous inflammation of the tonsils, and infiltration of the region of the parotid and submaxillary glands, frequently of the entire cellular tissue of the neck, of the retro-pharyngeal and laryngeal cellular tissue, which latter causes respiratory disturbances similar to those of œdema glottidis. There is great proneness of these swellings to suppuration, and even gangrenous destruction of the same has occurred.

Scarlatinous angina is often complicated with *diphtheria*, which may stay confined to the throat or spread to the nose, larynx and the contiguous portions of the respiratory mucous membrane; it can be a complication of the mildest, as well as of the severest cases. Some authors consider the diphtheritic inflammation as a direct effect of the contagion of scarlatina.

3. *An inflammation of the kidneys*, which may be of a catarrhal or parenchymatous nature. In the catarrhal form we find large masses of epithelial elements in the urine; it occurs mostly in the early stages of scarlet fever. The parenchymatous form is attended with albuminuria and hæmaturia, and occurs, as a rule, not before the end of the second or third week, but at times in the beginning; it is accompanied with dropsical effusion, mostly as anasarca, though hydrops of the serous sacs may also be associated with it.

It should be understood that scarlatina is an exceedingly variable disease. There are cases *without eruption*, which are sometimes followed by a more or less well-marked and extensive desquamation; there are rare cases *without angina*, yet decidedly marked by kidney disease, parotitis and infiltration of the cervical connective tissue; there are cases where the eruption follows an attack of nephritis, or parotitis, or infiltration of the cervical connective tissue, with or without angina. And even these

different varieties may be combined in the most complicated manner.

Scarlatina is a contagious disease, not only by contact and immediate exhalation, but also by transmission through persons who are not themselves affected. The nature of the poison is not known. The stage of *incubation* lasts from four to seven days, or longer. The predisposition to take the disease seems to be not nearly as universal as that for taking measles, quite a number of persons escape it altogether. Infants less than six months of age are mostly exempt from its attacks; but children between the ages of one to fifteen years are most liable to catch it; in later years the disposition to it decreases greatly; scarcely any one gets it a second time, but there are exceptions. It generally appears as an epidemic, and the different epidemics vary much in character, severity, time of year, and duration. Its normal progress has been divided into four stages:

1. The *stadium podromorum* commences with repeated chills, followed by heat, nausea, vomiting, violent headache, and a feeling of prostration. The pulse ranges from one hundred and twenty to one hundred and thirty and more beats per minute, and the temperature often reaches on the evening of the first day the height of 104° to 105.8° F. This is quite characteristic of normal cases, as no other disease shows such a rapid increase of pulsation and temperature. Besides these symptoms the patient commences to complain of sore throat, dryness, and burning, and pain when swallowing. On inspection we find the throat red and swollen, and the tongue coated, but red on its edges. This condition lasts in some cases only a few hours; in others it is entirely absent, or so mild, that it may be overlooked, the eruption appearing at once, while in a majority of cases it lasts one or two days, and quite exceptionally still longer. So, also, varies the intensity of the attack in different individuals; from a mere indisposition, which is scarcely noticed, it may at once be associated with stupor and convulsions.

2. The *stadium eruptionis* is almost always accompanied by an exacerbation of the fever. The eruption shows first on the neck, not, as in measles, on the face, which remains unchanged, presenting only feverish, reddened cheeks. From the neck it spreads further over the body, so that usually in twenty-four or thirty-six hours the whole body is covered. The deepest redness appears on the neck, on the extensor muscles, around the joints,

and on the dorsum of the hands and feet. Pressure with a finger upon the skin causes, for a moment, a white spot, which speedily grows red again from the *periphery to the centre*, unlike that in measles, which spreads from the centre to the periphery. As the eruption grows and spreads, so, also, grows the angina faucium, and the thick, white coating of the tongue is now peeling off, leaving it red all over with highly-inflamed papillæ, constituting the so-called strawberry tongue. The skin itches intensely. All these symptoms are not, however, alike in all cases. In some the redness may spread almost simultaneously all over the body and be very intense; it may be either scarcely noticeable or of different aspects, as described above; the angina also may amount to scarcely any thing, or be very intense; it may be complicated with diphtheritis, or be combined with catarrh of the larynx or bronchial tubes.

3. The *stadium florescentiæ*, the time during which the eruption remains upon the skin, lasts usually from four to five days; about the second day of this stage it is in its fullest bloom; at the same time the fever and throat symptoms reach their height. The urine contains considerable quantities of cast-off epithelial cells, and frequently traces of albumen; in general the patient is sickest at this stage. It is the climax of the disease. From this time all the symptoms grow milder; the eruption declines, the fever lessens, the angina gradually lessens, and the patient feels better altogether. Yet this is not uniformly the case. The fever may rise anew, because new complications set in.

4. The *stadium desquamationis* sets in usually on the fifth day after the eruption first appeared, and lasts from eight to fourteen days. At first we observe fine white scales peeling off on the neck, the desquamation extending gradually over the whole body. On the hands and feet great flakes of skin are often loosened by the patient himself, as a wholesome pastime after so severe an illness; fever and angina lessen constantly, until finally, in about three or four weeks from the commencement, perfect recovery takes place. This is the normal course of a simple scarlatina case.

The **Scarlatina maligna, Typhosa**, is characterized in the following way: In the premonitory stage already the patient is greatly prostrated, apathic, only half-conscious or comatose; the pupils are mostly dilated; there are either simply slight twitchings and jerkings of the limbs, or general convulsions; the tongue is dry;

the pulse very small, and scarcely countable; the body is burning hot, with cold extremities. The eruption is either intense, breaking forth suddenly all over, and peeling off very soon in large flakes, as though the skin had been scalded. Such patients die, and, it seems to me, for this physiological reason, that life cannot be sustained if a certain amount of the surface of the skin becomes destroyed. In other cases the eruption does not come out regularly, looks purple, livid, and is mixed with ecchymosed spots; diarrhœa and meteorism associate, and the tongue and gums become covered with a black coating. Also such patients die mostly in the second stage, or sink during the stage of desquamation.

Another bad form is that of **Angina maligna**, a *parenchymatous inflammation* of the tonsils and fauces. We observe in such cases great difficulty, even impossibility of swallowing, and a nasal twang when speaking. The tonsils are greatly swollen, closing up the fauces; all the parts appear dark red; there is an abundant secretion in the throat, in consequence of which the breathing becomes rattling; the fever rises high; the face is red and bloated, and the conjunctiva injected; there is great restlessness and anxiety. This condition terminates either in the formation of abscesses, or in gangrenous destruction of the parts. The first is the more favorable of the two. In case of gangrene we see a blister forming which bursts, and then gangrenous ulcers spreading rapidly in circumference, but less in depth, emitting a terrible stench. All this is attended with violent fever heat, very frequent pulse, coma with half-open eyes, great restlessness, sudden screamings, obstruction of the nose, difficulty of breathing, cold extremities, and retention of feces and urine. If the gangrenous process comes to a halt, the patient may recover, though very slowly; if it continues the patient dies within two or three days. In the latter case the color of the eruption grows livid, and does not disappear under the pressure of the finger.

Or the sore throat may be complicated with *diphtheria* and consequent infiltration of the parotid, submaxillary, and lymphatic glands. This diphtheritic process may extend up into the nose (compare Diphtheritis) and cause a virulent coryza, that much-dreaded symptom of scarlet fever, with fetid discharge from the nostrils, and a terrible smell from the mouth. At the same time the cervical glands and the connective tissue around them tumefy; the patient lies in a stupid or comatose state, with his

head bent backwards; the pulse ranges from one hundred and forty to one hundred and sixty per minute, and the temperature of the body 106° F. and over. Should this morbid process extend into the larynx, there are small chances left for recovery. In some cases the inflammation spreads along the Eustachian tubes into the *tympanum*, causing an otitis media, which may lead to perforation of the membrana tympani, and caries of the petrous portion of the temporal bone.

In other cases the infiltrated cervical glands suppurate, accompanied by a new increase of fever, causing various meningeal symptoms. At this stage not very unfrequently the synovial membranes inflame also, or pleuritis or pericarditis may suddenly set in, followed by an abundant *purulent* exudation.

During the period of desquamation most generally the third localization of the scarlatinal virus takes place, that into the kidneys, causing *parenchymatous nephritis*, with its subsequent *scarlatinal dropsy*. There are epidemics where almost all patients show symptoms of it—albumen and blood in the urine and dropsical swellings, while in others they are only exceptionally observed. It usually sets in with renewed chilly sensations, which are followed by fever, nausea, vomiting, pain in the region of the kidneys extending along the course of the ureters, with frequent desire to pass a little dark, dirty brownish looking urine, which contains blood, albumen and epithelial cells.

Still another sequel of scarlet fever is to be mentioned: *dropsy without albuminuria*, which generally creeps on slowly and may attain to a great height; it is generally not so dangerous as that caused by nephritis, seems to be the consequence of loss of solid constituents of the blood, or a weakness of the heart, and is characterized by great weakness of the muscles, great paleness of the skin, great acceleration of the pulse from slightest motion, and fainting fits.

The *chronic otorrhœa* after scarlet fever is mostly the consequence of a catarrhal inflammation of the meatus auditorius externus, while *deafness* has its cause in an inflammation of the middle ear, which has spread there through the Eustachian tubes, and caused perforation of the tympanum, or thickening of the same.

Another sequel of scarlatina is *œdema of the lungs*, which usually is complicated with hydrothorax and anasarca. Under constantly increasing dyspnœa and cyanosis the patient dies from

asphyxia. The same takes place, if *œdema glottidis* should be added to the pulmonary œdema.

In our PROGNOSIS we must consider as unfavorable symptoms: *sudden disappearance of the eruption*, which is always a sign of a dangerous complication; *sudden change of the scarlet into a livid color*, with rise of temperature and great frequency of the pulse, delirium or coma; *purplish color of the eruption* with ecchymoses or petechiæ, bleeding of the gums, bloody alvine discharges, which denote a dissolution of the blood; *intercurring diarrhœa or dysentery* with meteorism, great thirst and sudden loss of strength; *diminished secretion of urine, which contains albumen and blood;* intercurring *œdema of the lungs* or glottis; *gangrene of the tonsils* and *fauces*, and *diphtheritic* inflammation of the throat.

THERAPEUTIC HINTS.—As a preventive I would still recommend the potentized Belladonna, one dose every night, until symptoms appear. If it cannot prevent the attack, it has seemed at least to mitigate its violence. The clumsy imitation by the old school—drop-doses of the tincture or extract—could not possibly produce any beneficial results.

The terrible burning and itching of the skin is best relieved by rubbing the body all over with bacon (fat part of ham), olive-oil, or cocoa-butter, once or twice a day, always if the skin is dry, glands swollen, and there is a scrofulous diathesis.

When the temperature of the body rises to 106° F. and over, it has been found beneficial to envelope the whole body in a wet sheet; I would prefer warm to cold water.

Where there are several children in a family, the rest should be kept away from the sick-room.

For complications with diphtheria compare the corresponding chapter.

Acon., rarely, and only in the very beginning of the attack, if characterized by the following symptoms: great dry heat and congestion of the skin; thirst; rapid and hard pulse; great restlessness; headache; peevishness, which revolts against all interference; or at a later period: sudden excruciating pain in the stomach, gagging, retching, vomiting of blood, and stoppage of breath; distressed face, anguish; cold sweat on forehead; gasping.

Ailanth., "violent vomiting; severe headache; intolerance of light; dizziness; hot red face; inability to sit up; small rapid

pulse; drowsy, at the same time very restless; great anxiety; two hours after the first invasion the drowsiness had increased to insensibility, with constant muttering delirium; did not recognize the members of the family; she was now covered, in patches, with an eruption of miliary rash, with efflorescence between the points of the rash of a dark, almost livid color; the patches between the points of the eruption were of a dingy, dull, opaque appearance; the eruption was more profuse on the forehead and face than elsewhere, and especially on the forehead; the pulse was now small, and so rapid as hardly to be counted; the surface had become cold and dry; the livid color of the skin, when pressed out by the finger, returned very slowly; the whole was a most complete picture of torpor." These toxical symptoms, caused by Ailanthus and observed by Dr. Wells of Brooklyn, simulate so strikingly adynamic forms of scarlatina that it must be a curative agent in such cases. Has since been confirmed by Dr. Chalmers and others.

Amm. carb., hard swelling of the right parotid and lymphatic glands of the neck; putrid sore throat; miliary form of eruption.

Apis is, according to Wolf, indicated in usual as well as in those grave cases where the blood is thoroughly poisoned by the virus, and the whole nervous system under its paralyzing influence; the fever assumes a typhoid character; the tongue is of a deep red color, and covered with blisters, which become converted into sores and ulcers, with stinging pains; the nose discharges a thick, white, bloody, fetid mucus; the tonsils are swollen and hard, and the swallowing difficult; the whole abdomen is sore to the touch; the discharges from the bowels are diarrhœic, slimy and bloody; nephritis; the urine is scanty, and of a dirty red color; micturition frequent and sometimes painful; the breathing is accelerated and labored; there is loss of consciousness, delirium, sopor, convulsions, trembling of the limbs; the skin is either burning hot all over, or gradually growing cool, or hot in some and cool in other places; the fever rises constantly, and the pulse changes frequently in character; dropsical symptoms during desquamation.—Cerebral irritation; piercing shrieks; rolling of the head; grating of teeth; irregular, slow pulse. —"Apis is never indicated in the coryza form, only with a dry nose, dryness of the throat, and hydrocephalic symptoms." (Hering.)

Arsen., when the eruption delays or grows pale suddenly, livid,

or is intermixed with petechiæ; malignant sore throat; different dropsical affections; dyspnœa; extreme restlessness and anxiety; prostration; typhoid symptoms; cold hands; burning heat internally, with a cold external surface; cold perspiration; quick, small pulse. *Nephritis albuminosa.*

Arum triph., great soreness of the mouth; redness of the tongue, with elevated papillæ; cracked corners of the mouth and lips; stoppage of the nose, without or with profuse yellow discharge, filling the whole nasal cavity and throat; putrid sore throat; diphtheria; submaxillary glands swollen; urine abundant and pale; eruption all over the body, with much itching and restlessness; picking at the nose, lips, and finger-nails.

Asclep. syr. is recommended for dropsy in consequence of nephritis.

Baryt. carb., swelling of the parotids, tonsils and submaxillary glands, with much saliva, or else dryness in the throat, with pressing, stinging pain on swallowing. During and after desquamation.

Bellad., congestion to the brain, with delirium; on closing the eyes he sees horrible things; wants to sleep, but cannot sleep; anxious dreams; starts in sleep; suddenly springs up in bed, or attempts to; throbbing of the carotid arteries; involuntary moving of the hands to the head; bending the head backwards; head hotter than the remainder of body; eyes injected; face fiery red, or pale and puffed, or sunken; tongue white, with red edges, or else red all over, with raised papillæ; fauces inflamed, swollen; cannot swallow, or only with greatest difficulty; external swelling of the neck; vomiting. (Bellad. is only indicated in the smooth form of eruption with vascular and nervous excitement; it does no good in adynamic cases. The miliary form of eruption is much more adapted to Amm. carb., Laches., or Rhus tox.)

Bromium, when the parotids became involved, especially the left, it did better than any other remedy. (W. Payne.)

Bryon., when the eruption delays or suddenly disappears; beginning dropsical symptoms; pleuritis or meningitis. Crimson-red face; dry lips; dry, brownish tongue; great thirst, and drinking much at a time and hastily; obstruction of the bowels; sleep with eyes half open; disinclined to move; pain on moving.

Calc. carb., after Bellad., about the third day; great, hard swelling of all the glands about the neck; greatly inflamed throat,

with aphthæ on the tonsils and roof of the mouth; the pale, bloated face shows no signs of eruption; great anxiety and oppression, threatening paralysis of the lungs; scrofulous individuals; longing for boiled eggs. Otorrhœa as a sequel.

Camphora, in desperate cases, with rattling in the throat; hot breath, hot forehead, with hot perspiration; limbs cold and purple.

Carbol. ac., a case by Dr. Rouht: sleeping uneasily with half open eyes; twitching of hands and limbs; starting from sleep; delirious talking; moaning; tossing; pulse 160; tongue thickly coated in centre, afterwards clearing and leaving it of a glossy, red color; throat swollen inside and outside; difficult swallowing and breathing; nose stopped up; lips dry and cracked; odor of breath almost unbearable; fauces fiery red and swollen; diphtheritic patches on tonsils and pharynx; urine scanty and red; bowels moved every hour; eruption of a dark red color; miliary vesicles over the entire body.

Carb. veg., in last stage; rattling in the throat; complete sinking of vitality; cool breath; cool extremities; sticky, cold perspiration; wants to be fanned all the time.

Coffea, as an intermediate remedy for excessive nervous excitement, sleeplessness and palpitation of the heart.

Colchic., nephritis; bloody urine, looking almost like ink and containing albumen; dropsy.

Cuprum, when the eruption quickly disappears, with subsequent convulsions, rolling of the eyes, distortions of the face, mouth and all the flexor muscles; great restlessness, tossing about; sopor; delirium. (No eruption, but terrible sore throat; delirious, fearing the bed clothes would catch fire, etc.; afraid of every one who approaches; afraid of falling; clinging tightly to the nurse; afraid of being injured by any one else; conscious, knows other people; won't stay in bed, but on the lap.) (R. Gardiner.)

Digit., nephritis after desquamation, with anasarca and œdema of the lungs.

Gelsem., has been given in large doses to "control the pulse, calm the nervous erethism, determine the eruption toward the surface, relieve pain and lessen the cerebral congestion." I believe its proper homœopathic sphere of action will be found rather in those asthenic forms of scarlet fever, which from the commencement show marked signs of a general toxication of the blood by the scarlatinal virus, viz.: profound and intense pros-

tration of the whole muscular power; cerebral intoxication; pulse frequent, soft, weak and so feeble as sometimes to be imperceptible; impaired vision; spasms and paralysis. Dr. Morgan gives the following hints: Chilliness, or at least cold hands and feet; heat with *languor* and *drowsiness;* when sleeping, the patient talks in delirious muttering, or half wakes at times; crimson flush of the whole face in all positions; suffusion of eyes, heavy looking; throat feels as if swelled or *filled up*, is diffusely red; tonsils red and slightly swollen; when the eruption recedes, all the viscera are threatened.

Helleb., dropsical symptoms, in consequence of nephritis; urine with sediment like coffee grounds; squinting; pupils dilated; face pale and puffed.

Hepar, after previous abuse of mercury. Best remedy for commencing nephritis. (Kafka.)

Hydr. ac., has been suggested by Dr. Wells, when the eruption in its early appearance is dark-colored and soon becomes livid, only slowly regaining its color when this is expelled by the pressure of the end of the finger; rapid, feeble pulse.

Hyosc., stupid drowsiness, or else great nervous excitability and sleeplessness; utter stupidity, or else illusions of the imagination and senses; vacant staring at things, or else sparkling red, prominent eyes; embarrassed, indistinct speech; answers no questions, or else indistinct muttering loquacity; mouth and throat dry and red; inability to swallow; abdomen distended, tympanitic; watery, involuntary and unnoticed stools in bed. "Its sphere seems to be limited to cases with acute inflammatory affections of the brain, or to that state between erethism and torpor, which places it in relation to Bellad. and Stramon., as in typhoid fever, below Stramon." (P. P. Wells.)

Iodium, after mercury; ulcers in the throat; glands swollen, suppurating; everything appears bright blue to him in the distance; worse from warmth and from warm things of all kinds.

Kali bichr., diphtheritic inflammation; discharge from nose is tough and stringy; pain in left ear; swelling of parotid glands; croupy cough; measle-like eruption; red, raw, glistening tongue; deep ulcers in the fauces.

Kali carb., swelling of the right parotid gland; fever and restlessness; always worse about three o'clock in the morning; smell from the mouth like that of old cheese; great dryness of the skin; œdematous swelling, like little bags, between the eyebrows and upper eyelids.

Laches., miliary form of eruption; also when the eruption turns purple at a late stage; in malignant cases with threatening gangrene or sloughing ulceration; acrid, foul secretions; low grade of inflammatory action; approaching to a condition of torpor. Diphtheritic inflammation of the throat; fluids regurgitate through the nose; ulcers on the tongue; suppuration of the glands of the neck; pleuritic, pericarditic and general dropsy in delayed desquamation, with great oppression; nephritis with urine almost black; badly smelling stool; fever worse in the afternoon.

Lycop., diphtheritic sore throat; stoppage of the nose; rattling in the throat; comatose state; deafness and purulent discharge from the ears; great peevishness; crossness on getting awake; worse from being covered too much; scanty, dark red and albuminous urine, with strangury; œdema of the face, hands and feet; ascites; secondary eruption of dark red blotches on hands, thighs, back or face; colic during desquamation, with costiveness. Is sometimes indicated at the onset.

Mercur., consecutive anasarca and ascites; soreness and inflammation of the genital organs.

Merc. jod., after Laches.; loss of voice, hoarseness, can only lisp; fauces bluish-red, ulcerated.

Mur. ac., intense redness rapidly breaking out all over the body in the first hours of the attack with coma; or scanty eruption, which is interspersed by petechiæ; dark redness of the face; purplish color of the skin; burning heat of the body; great anxiety and restlessness, constantly compelling the patient to uncover himself; aggravation in the evening; pulse intermitting at regular intervals; severe angina; dark, bluish-red fauces, aphthæ; foul breath; discharge of thin, acrid pus from the nose and lips; sighing, groaning respiration; sliding down in the bed.

Nitr. ac., diphtheritic sore throat extending up into the nose, from which a profuse, thin, purulent matter discharges; tonsils swollen; tongue dry, fissured; difficult deglutition; indistinct speech; sometimes deafness; *intermitting breathing;* eruption of a fine, miliary nature; skin burning hot.

Opium, convulsions, delirium, and a soporous condition, with snoring, which were not relieved by Bellad.

Phosphor., after Mur. ac., although, on the whole, the patient be improving, a suspicious rattle commences in the throat; also by prevailing chest-symptoms; likewise in case of oversensitiveness

of all the senses, and yet an apathetic quietness and "don't-care" disposition appears; burning in different parts of the body, which compels change of position. Copious coryza; alarming weakness and increasing frequency of pulse; during night, hands cold and bluish; congestion to the head.

Phosph. ac., complete apathy and indifference; don't want to talk; answers slowly and reluctantly, or short, incorrectly; stupor; stupid expression of the face; bleeding from the nose; meteoristic distension of the abdomen, with a great deal of rumbling and gurgling, and unpainful, watery, grayish diarrhœa; involuntary stools; great debility; ecchymosed spots; bluish spots on the parts which the patient lies upon; pulse weak, frequent, intermitting; profuse sticky sweat.

Phytol., eruption dry, of a shriveled appearance; in passing the hand over the skin it feels like brown paper; urine suppressed; hands and feet burning hot, cannot keep them covered; restless and sleepless; tongue dry in centre; sides coated brown; throat covered with a diphtheritic deposit of an ash color. (C. A. Sibly.)

Rhus tox., when, after Belladonna, about the third day the fever is still rising; when the eruption of the miliary kind looks dark; when the eyes appear swimming, as if intoxicated; when the tongue grows red and smooth, and a drowsy state, with delirium, sets in; great restlessness; bleeding from the nose at night; rheumatism of the joints, worse in rest; œdema of the scrotum and penis; the swollen, parotid glands break open and discharge ichor copiously; impure, deep cavity, as if one could see into the throat; first the left, then the right. Often indicated at the onset of the miliary form.

Secale, watery discharge from the nose and yet a stoppage of the nose; bloody and albuminous urine; cannot bear the heat of the stove, or remain covered.

Senega, oppression; rattling in the chest; loose but feeble cough, with little expectoration; hydrothorax.

Silic., fever worse at night; sleep disturbed by pain in the ears; child wakes up throwing the arms about and screams; puts the hands behind the ears; otitis media; if sickly after vaccination, or soon after, scarlet fever follows; like to be covered, wrapped up.

Stramon., similar to Belladonna cases, but "the eruption is less bright, shows a disposition to fade or recede, and the urine is small in quantity or its secretion suppressed." (P. P. Wells.) Parenchymatous nephritis; delirium, hallucinations, convulsions.

Great dryness of the throat, compelling frequent drinking; swelling of the tongue, so that it hangs out of the mouth; paralysis of the tongue.

Sulphur, rapidly growing red all over, and intensely so, with following sopor soon after the first vomiting; burning heat of the skin; eruption at first bright, soon growing purple, attended with diarrhœa, worse in the morning. Cerebral disturbances, with sopor, starting, etc.; bloated, shining red face with white circle around the mouth; dry nose; dry, cracked and red tongue.

Tereb., especially when the kidneys become involved with parenchymatous inflammation and its smoky, bloody urine. "Albuminuria and dropsy after scarlet fever; urine greenish, scanty, loaded with albumen; much thirst, drinking often and much at a time." (J. B. Bell.)

Veratr., in hot summers; burning heat changing with coldness of the extremities; small, frequent pulse.

Ver. vir., according to western physicians, in large doses, rather antipathically, to subdue arterial excitement. Convulsions with greatly dilated pupils, perfect sleeplessness. Red streak down the centre of the tongue.

Zincum, especially in threatening paralysis of the brain; complete unconsciousness; the child lies perfectly motionless; jerking of the whole body, or twitchings of single limbs; grating of the teeth; shrill, frightful screams, with altered voice; cannot speak any more; occiput very hot; forehead cold, covered with cold perspiration; white, pale, distorted face; breathing short and quick, but no rattling; discharge from the bowels and bladder involuntary; limbs icy cold, and the whole body cool; bluish-red all over; pulse thread-like, scarcely countable. "Convulsions, followed by stupor; occiput hotter than forehead; screams before the spasms; trembling of the muscles; constant motion of the feet between attacks; urine scanty, bloody."

Rubeola, Rœtheln.

The many different views as to the nature of this disease, whether it be a hybrid affection of scarlet fever and measles, or an affection distinct from either of the two, seem now to settle down in favor of the latter view. For an attack of rubeola protects neither against measles nor scarlet fever, and vice versa.

Rubeola is contagious, appears in epidemics. Its stage of in-

cubation lasts probably from two and a half to three weeks; prodroma are scarcely ever observed. The breaking forth of an exanthem is the first, or at least among the first symptoms of the disease. It commences on the face and spreads gradually in a downward course all over the body. With it there may be an increase of temperature from 2° to 4° F. above the normal, though usually it amounts only to about 1.5° F., or there is none at all. The rash has great similarity with that of measles, but the rubeola spots are smaller, rounder in form and paler in color. Sometimes it is accompanied with some sneezing, coughing, slight photophobia, sore throat, and some slight transitory disturbance of the appetite. Affections of the kidneys do not occur. Desquamation is absent in most cases. The duration of the exanthem is often scarcely two, but sometimes four days. Recovery takes place undisturbed after its disappearance. The whole process seldom needs medicinal interference. For the catarrhal symptoms either Acon., Bellad., or some other remedies may be indicated.

Variola, Small-Pox; Variolois, Varioloid.

The nature of the variola virus we do not know, except by its effect upon the organism. It is regenerated while it develops its effects, and thus propagated from organism to organism. The infectious matter is contained in the variola pustules as well as in the exhalation from the small-pox patient. Infection takes place, therefore, not only by inoculation or immediate contact with the patient, but also by more remote means. The poison can be carried by other persons in their clothes, or by things which have been in the atmosphere of the patient. It is very persistent in its nature, and may retain its property for years if excluded from the atmosphere, and not exposed to great heat. There is no difference between the virus of small-pox and that of varioloid; either may cause the one or the other disease. This seems to depend entirely upon the susceptibility of the organism, and its adaptation for a greater or less development of its effects. Small-pox and varioloid differ, therefore, only in the intensity of their symptoms. The individual predisposition for taking the disease is wide-spread; no sex, no age, not even the fœtus is exempt; some persons, however, are never affected by it. Those who once lived through an attack are, almost without exception,

safe from any further infection, at least for a long time. *Vaccination* seems likewise to destroy the predisposition to the disease; if not in toto, at least partially. For, ever since vaccination has become generally introduced, the epidemics have grown decidedly milder, the majority of cases being varioloids, while previous to the discovery of vaccination, the reverse was the rule. Nevertheless, there are epidemics which are still characterized by great malignity, while others again are exceedingly mild. It has not been possible to trace out any cause for this difference. This is one view of the vaccination question. Of late years, however, not only great doubts of the correctness of this view, but direct accusations of its falsity have been propagated by men as able as its defenders. The lively agitation in England and Germany against the coërcion law of vaccination has produced a whole library on this subject, and will make itself felt more and more every year. The statistic assertion that small-pox epidemics have become milder since the general introduction of vaccination, is flatly contradicted by the researches of the foremost statistician of Germany, Dr. Engel, in Berlin, who already in the year 1862, had to confess, "there has no change occurred in the coming and going of small-pox epidemics, nor in general in the number of small-pox patients since the introduction of vaccination." (*Zeitschrift des Königl. Preussischen Statist. Bureaus, February*, 1862). But it does not lie in the sphere of this work, to reproduce the details of this contention; my belief is, that vaccination after a few generations will be as obsolete in medical therapeutics as inoculation, blood-letting and kindred barbarisms of old are to-day.

Its Course and Symptoms. After the lapse of nine or ten, sometimes more days of incubation, the initial stage, or the *stadium invasionis*, begins with a shaking chill, or repeated chilliness, which is followed by a violent fever. The temperature rises on the first day to 103° or 104° F., and on the second or third day to 105° or 105.5°, and even 107° F. This high fever is accompanied with a number of painful symptoms of the head, throat, stomach, and general body; in some cases with delirium and convulsions. No other, however, is so characteristic of the disease as the *dreadful backache*, with which it is in most cases associated. The fever rises continually during the first three days, showing slight remissions only in the morning. On the evening of the third day it reaches its height. Only in rare cases is

this premonitory stage absent. In some epidemics the initial stage is marked by an *erythematous* eruption, either diffuse or measly; or by a *hæmorrhagic* exanthem, which consists of extremely small punctate, often pin-head sized, hæmorrhages in the epidermis, at times so closely crowded together, that the impression of a diffuse redness is produced. Sometimes both forms are combined and we see, then, petechiæ upon an erythematous base. The petechial eruption has its favorite seat on the lower region of the abdomen, on the genitals and the inner surfaces of the thighs, also on the lateral surfaces of the trunk up to the axillæ, the contiguous portions of the arm and the pectoralis major muscle. This eruption generally appears on the second day and lasts from twelve to twenty-four hours. As a rule the petechial form lasts longer.

The second stage, the *stadium eruptionis*, commences on the evening of the third day. There appear little red spots first on the face. If very numerous, they coalesce like measle-spots, with which they might be confounded if it were not for the granulated feel which they present to the sense of touch. On the second day the eruption appears on the neck, chest and back; and on the third day it spreads over the extremities. The granulated feel of the eruption is due to the formation of papules in consequence of an enlargement of the cells of the rete Malpighii, which pushes the epidermis up. Soon an exudation of clear fluid from the papillary layer converts the papules into vesicles, and separating the cells into small groups, a reticulated cavity is formed, which contains pus-corpuscles and the epithelial framework. This is the reason why a pock never discharges fully if opened only in one place. After the formation in vesicles, most pocks show a *central depression* or *umbilicus*, which some think to be due to the presence of a hair follicle or the duct of a sweat gland in or over its centre; others teach that the periphery of of the pock swells more rapidly than its centre, and thus becomes more prominent. This umbilicus disappears, when the pustule is fully ripe, but reappears again from the earlier drying of the centre. It requires about six days for the ripening of the pustules; or counting from the time of invasion, nine or ten days. Simultaneously with this eruption on the skin, an eruption of the same character appears upon the different mucous membranes. On the conjunctiva it causes a flow of tears, photophobia, and in severe cases total closure of the eyes for many days; in

the mouth it causes salivation; in the pharynx, difficulty of swallowing; in the larynx, hoarseness and cough; and in the genitals, itching and burning pain. Even the external portion of the dura mater has been found studded with pustules filled with matter. In several instances the suppuration was of such a character as to destroy the membrane where the pustules existed. (Report of Drs. Howell and Johnson, Small-pox Hospital, San Francisco. Epidemic of 1868. *North American Journal*, February 1869, p. 443.)

The full development of the eruption is generally attended with great relief to the patient; all the pains lessen and the fever decreases considerably. In cases of variola confluentes only, the relief is not so marked. This is, however, not the end of the trouble.

On the ninth or tenth day the fever commences to rise again; it is the beginning of the *stadium suppurationis s. maturationis.* At this time the pustules enlarge still more, the surrounding skin commences to inflame and to swell, and a red areola forms around each pustule. Redness and swelling coalesce from all sides, and constitute a diffused, erysipelatous appearance of the whole face, greatly disfiguring the patient. This process gradually spreads over the whole body, in the same order in which the eruption commenced to appear. The patient complains of great tension and burning of the skin, and the affections of the eyes, mouth, throat, larynx, and genitals increase in corresponding order. The temperature rises again from 102 and 103° to 104° F., frequently attended with chilly sensations; it rises according to the intensity of the inflammation of the skin; and does not abate until the dermatitis reaches its acme. This renewal of heat is called the *secondary* or *suppurative fever.* It may be attended with delirium, and symptoms of adynamia and general paralysis, in consequence of the absorption of pus into the blood. In other cases it combines with a hæmorrhagic diathesis, when the content of the pustules becomes bloody, and bloody extravasation within the skin or hæmorrhages from different mucous membranes take place, *hæmorrhagic small-pox;* or, though only in rare cases, portions of the inflammation mortify and discharge a badly-looking ichor, *gangrænous small-pox.* Besides all this, as the variola-poison is apt to localize during this stage in serous membranes and parenchymatous organs, we meet with a number of different complications, such as: dyspnœa, stitching

pains in the chest, cough, bloody expectoration, pneumonia, pleuritis, pericarditis, meningitis, suppurative inflammation of the joints, periostitis, subcutaneous and inter-muscular abscesses, inflammation and suppuration of lymphatic glands, suppuration of the eyes with hypopyon, and croupous exudations in the larynx and trachea.

The last stage, or the *stadium exsiccationis*, usually commences about the eleventh or twelfth day. The pustules burst and discharge their contents, or dry up, and become covered with hard, brownish crusts. There is still some fever at first; it lessens, however, continually, and with it gradually disappear all the painful symptoms which arise from the eruption on the different mucous membranes. The crusts now gradually drop off, at first those which cover the most superficial pustules; they leave dark red, somewhat elevated spots, which, however, after some time, entirely disappear. Not so those which form upon deep-seated ulceration. They adhere a long time, and leave, after dropping off, an uneven scar, which looks at first red, but by degrees grows conspicuously white, to remain so for life. In confluent small-pox the destructive process is of a still greater extent, in circumference as well as in depth, and frequently the remaining scars greatly disfigure the face, similar to scars of deep burns. This is the course and progress of variola.

Varioloid runs a similar but much milder course; all its stages are milder and shorter; its secondary fever is much less intense, or wanting altogether; and its suppurative process does not destroy the cutis, so as to leave scars.

The **Purpura variolosa** represents the worst course which small-pox can take in the *initial* stage. It attacks young and robust persons by preference, begins with rigor, headache, very intense pain in the back, and great prostration. Within eighteen to thirty-six hours a scarlet-like erythema appears over the entire body, which is mingled with petechiæ and larger cutaneous hæmorrhages, varying in size up to that of a silver dollar, which usually become confluent upon the chest and abdomen. The face is rendered red and puffy, the conjunctiva blood-shot, and large black rings are formed around the eyes, through hæmorrhage into the cellular tissue of the lids and their contiguous parts. The tongue is swollen and covered with a whitish-yellow coating, and the throat is affected with diphtheritic exudation, from which issues a terrible odor. There is pain in the pit of the

stomach, nausea and vomiting of bile and blood, bloody diarrhœa and offensive urine. In some cases we meet a troublesome cough, with bloody expectoration, and in women, hæmorrhages from the womb. The temperature rises to about 104° F.; the intelligence is usually unimpaired until a short time before death, when the body, particularly the trunk, assumes a blackish, or leaden-gray hue. Some patients die within three days after the beginning, or even earlier, some survive the sixth day. (Curschmann.)

PROGNOSIS.—The fewer the pustules, the lighter the case; confluent pustules are much more severe. Hæmorrhagic, septic and gangrenous small-pox are not absolutely fatal, but very dangerous.

When typhoid symptoms are added, the prognosis must be very guarded.

The younger the individual the greater the danger. Very young infants are always in great danger.

In pregnant females it brings on abortus.

Inebriates are liable to be taken with delirium tremens.

Any of the complications mentioned makes the diagnosis doubtful.

PREVENTIVES.—*Vaccination* is lauded and equally condemned. The humanized virus and the lancet have given place to the ivory point and the cow-pox virus. This is an improvement. Syphilis at least is thus prevented from being propagated any longer by vaccination.

Internal vaccination is recommended and practiced by Dr. Kaczkowsky, and consists in the administration of one dose of Sulphur,[30] which is left to act for fourteen days, and is followed by the administration of **Vaccininum,**[4] or **Variolinum.**[4] About the seventh or eighth day febrile symptoms occur, and on the eighth, ninth or tenth day a granular eruption, of the size of poppy seeds, appears under the skin, which soon ripens and heals. This process has never been carried out to a sufficient extent so as to enable us to judge of its efficacy.

Dr. H. Boskowitz, of Brooklyn, recommends the virus of the *malanders* or *grease* of the horse either for inoculation, instead of cow-pox virus, or for internal use in a high trituration. The successful internal application of **Malandrinum** as a preventive has been confirmed this season (1880–81) by Dr. R. Straube and myself. Dr. Hering has advised the sprinkling of a weak solution of cyanide of potassium about the house, because such me-

chanics as use it in their manipulations, have been observed by Dr. Korndoerfer to be exempt from the disease in small-pox epidemics, because the sulpho-cyanide of potassium, which is present in the saliva of the healthy, disappears from there in small-pox patients, and appears instead in the contents of the pock. This has been demonstrated by me about the year 1850. Still others have used **Baptis.**, or **Sarracenia**, as preventives, with great success. Who shall gainsay it? They all were trustworthy observers, and epidemics of small-pox change as much in their peculiarities as epidemics of scarlet fever or any other disease.

THERAPEUTIC HINTS.—Apis, where there is an erysipelatous redness and swelling, with stinging, burning pains; stinging burning pain in the throat; dyspnœa; suppression of urine.

Arsen., in asthenic cases, with great sinking of strength, burning heat, frequent small pulse, great thirst, great restlessness, and when the pustules sink in, and their areolæ grow livid.

Baptis., typhoid symptoms; pustules appear more thickly in throat than on skin. It proved exceedingly effective during an epidemic, preventing even the offensive effluvium. (E. Williams, *B. J. H.*, 1873, p. 344.)

Bellad., during the first stage; high fever; congestion to the head; sleeplessness, with desire to sleep; convulsions. Later, sore throat and cough.

Bryon., at the commencement, and also when the chest symptoms indicate it.

Calc. carb., very important during dentition.

Camphora, in those dangerous cases where the swelling suddenly sinks in and the pustules suddenly dry up, showing a complete giving out of the life-forces.

Carb. veg., when the eruption seems to recede, with cold extremities, small, empty pulse, oppression of chest and harassing cough.

Canthar., dysuria and bloody urine; the eruption assuming a hæmorrhagic tendency.

Hepar, croupy cough; suppuration.

Hydrast. can. has been given successfully when there was great swelling, redness, and itching, and great soreness of the throat. Is said to prevent the pitting to a considerable degree.

Malandrinum,[30] has been given during the last epidemic (1880–81) by Dr. R. Straube, several others and myself with great suc-

cess as a preventive as well as a curative agent. It prevented the suppurative fever, or lessened it at least to a considerable degree, and took away all offensive exhalation. Cerebral symptoms, such as delirium and hallucinations necessitated the interposition of **Stramon.**, while great soreness of the throat and cough required **Bellad.** An article on Malandrinum by Dr. R. Straube, which contains a partial proving of this remedy, can be found in the *North American Journal of Homœopathy*, August number, 1881.

Mercur., especially during the suppurative stage; great flow of saliva; dysenteric discharges from the bowels; syphilitic taint.

Phosphor., hæmorrhagic diathesis; bloody contents of the pustules; hard, dry cough; bronchitis; hæmorrhage from the lungs. Typhoid form.

Phosph. ac., typhoid conditions; subsultus tendinum; great restlessness; great fear of death; the pustules don't fill with matter; some degenerate into large blisters, which burst and discharge a watery fluid, leaving the surface excoriated; watery diarrhœa.

Rhus tox., typhoid symptoms, dry, cracked tongue; sordes on the lips and teeth; great debility and restlessness; the eruption shrinks and looks livid.

Sarracenia has been used empirically, and is said by some to shorten and to ameliorate the progress of the disease; others deny it. The fact of it is, we do not know any characteristic indications of the remedy as yet.

Sulphur is indicated where there is any tendency of metastasis to the brain during the suppuration; is indispensable occasionally as an intercurrent remedy when others seem to fail; and Goullon advises its uniform use in the stadium exsiccationis.

Tart. emet. has been found by some to ameliorate the progress of the disease.

Thuja, recommended by v. Boenninghausen as a preventive as well as a curative agent. He states that it shortened in the epidemic of 1849, in his neighborhood, all cases, and prevented all scars.

Vaccininum has been used undoubtedly with great benefit in small-pox; its use has shortened and ameliorated all stages quite considerably. Sulphur was given afterwards.

Variolinum makes the progress of the disease much milder; quickly removes all dangerous symptoms; changes imperfect pustules into regular ones, which soon afterwards dry up; promotes suppuration on the third day, and exsiccation on the fifth, sixth,

and ninth day, and prevents all scars. This is the unanimous testimony of ten physicians who have used it in different epidemics.

Varicella, Chicken-Pox.

Some pathologists consider chicken-pox as the lightest form of variola. This cannot be. For experience teaches, that varicella does not extinguish the liability to either cow-pox or small-pox, and that an infection with varicella causes the identical varicella and not variola or varioloid.

Varicellæ often prevail epidemically, and we also find sporadic cases. They frequently precede, accompany or succeed epidemics of small-pox, measles and scarlet-fever.

They consist, at first, of little red spots, like flea-bites, which in the course of a few hours develop themselves into vesicles, filled with a transparent, straw-colored fluid. The form of these vesicles varies, and according to the different forms which they occasionally assume, they have been divided into *varicellæ globulosæ, ovales, lenticulares, coniformes, cuminatæ.* Some of them often fill with pus and become *varicellæ pustulosæ*, leaving, after desiccation, a scar. Their appearance, in most cases, is the first symptom of the disease, without any previous ailment. They spread irregularly over the body, and continue to appear in crops for several days, so that, when the first crop is already in a state of desiccation, a new crop shoots up. In this way the whole process may last fourteen days, and even longer. A similar eruption occasionally takes place upon the mucous membranes, and forms little ulcers in the fauces; but that is not always the case. The general feeling of the patient is not very often materially disturbed, though some cases are attended with fever, headache, cough, want of appetite and general indisposition.

THERAPEUTIC HINTS.—It seldom needs particular treatment. The occasionally attending symptoms may be met by Acon., Ant. crud., Bellad., Hyosc., Mercur., Pulsat., Rhus tox., Tart. emet. Compare Variola.

SKIN.

The skin, as the exterior investment of the body, serves to protect it; at the same time it is the medium by which a continued exchange goes on between the interior organs and the outer world. It is the connecting link between them, the last and lowest of the human frame. Its affections are almost always tokens of some internal derangements, hence their suppression is almost always followed by an aggravation of internal troubles. On the other hand internal complaints get better in the same degree that the morbid process passes outwardly to the skin. This we might state in brief as the essence of Hahnemann's psora-theory, which has been thrown aside by the would-be-wise, who never understood it. According to Nunez the suppression of cutaneous eruptions on the anus is followed by liver complaints; on the legs, by digestive derangements; on the scrotum and penis, by impotence and seminal emissions; behind the ears, by cough and affections of the eyes; on the scalp, by pulmonary phthisis; on the arms and hands, by laryngeal phthisis; in the palms of the hands, by nervous asthma; on the nose and nostrils, by discharges from the ears; on the face (acne rosacea), by heart diseases. The skin being easily accessible to ocular inspection and microscopical investigation, its affections have been thoroughly searched and minutely arranged and described, especially by Hebra. It would alone fill a large volume were I to give a minute investigation of this subject. For such there is no room in a work of this kind. I shall confine myself to a cursory exposition. Besides, several of these affections have been treated of in previous chapters.

I. HYPERTROPHY OF THE SKIN.

A hypertrophy of *the entire structure* of the skin we often find

in single, confined places, constituting so-called *moles*, or *mother's marks*, and *soft warts*. They appear raised above the level of the skin, and, from large deposits of pigment within the rete Malpighii, they are of a dark brown color and covered by a luxuriant growth of hair.

A hypertrophy of the *epidermis*, hard and horny, constitutes *callosities*, which form on such places as are exposed to external pressure, especially on the hands and feet. *Corns*, or *clavi*, are callosities, which grow on small, circumscribed places of the feet in consequence of the pressure of tight shoes. *Horns*, or *cornua cutanea*, consist either in an excessive, circumscribed hypertrophy of the epidermis or in enlarged hair-follicles.

An abundant formation of *pigment* in the rete Malpighii causes a more or less dark color of the skin; when accumulating in confined spots, without rising above the level of the skin, it constitutes *naevi spili* (mother's marks); *lentigines* (liver spots); *ephelides* (freckles); *chlosmata uterina*, that is, brownish spots on the forehead and upper lip during pregnancy, or in consequence of uterine disorders; and the peculiar darkening around the nipples and the darkening of the linea alba during pregnancy.

A hypertrophy of the *papillary* layer of the cutis constitutes *ichthyosis.*

Ichthyosis, or Fish-Skin,

Is, according to Hebra, always of a congenital or hereditary nature. The skin appears dry and rough, and covered with thickened and exfoliating cuticle, like scales, all over, with the exception of the face, the inner side of the joints and the scrotum. In light cases the skin presents merely a rough appearance, being covered with fine, white scales, *without any sign of congestion or inflammation underneath.* These light cases are called by some authors *pityriasis*, while other writers class under pityriasis also those cases where such small, whitish patches of unhealthy cuticle form upon a red, inflamed surface, calling it *pityriasis rubra.* It seems that the latter is a superficial dermatitis, and has nothing to do with a diffused hypertrophy of the papillary layer of the cutis.

Compare Arsen., Calc. carb., Clemat., Graphit., Hepar., Lycop., Petrol., Phosphor., Plumbum, Sepia, Silic., Sulphur, Thuja. Rubbing with oil, and afterwards taking a warm bath, is best suited to remove the hard scales.

Hypertrophy of *single papillæ* causes *warts* (verrucæ vulgares), and *fig-warts* (condylomata). For common warts: Ant. crud., Calc. carb., Caustic., Dulcam., Natr. mur., Nitr. ac., Phytol., Rhus tox., Sepia, Sulphur, Thuja. For fig-warts compare venereal diseases.

A circumscribed hypertrophy of the *cutis* constitutes so-called polypi of the skin, and the *molluscum simplex*, a hard, sometimes pediculated tumor.

A hypertrophy of the cutaneous *capillaries* causes *telangiectasias*. Some of them remain stationary through life, while others enlarge continually, and may give rise to profuse hæmorrhages.

Compare **Bellad., Ferr. phosph., Lycop., Phosphor., Platina, Sulphur,** and to which may be added: Calc. carb., Carb. veg., Fluor. ac., Pulsat., Thuja.

II. ATROPHY OF THE SKIN.

Atrophy of the *entire skin* takes place in consequence of general marasmus, either senilis or præmaturus, induced by exhausting diseases.

A want of *pigment* throughout the whole skin is congenital to albinos or kakerlakes. A disappearance of pigment in single places of the skin, *vitiligo* or *achroma*, gives, especially to dark persons, a white-spotted appearance.

An atrophy of the *hair-follicles* causes baldness, *calvities*, or, as it happens mostly to aged persons, *alopecia senilis*. The falling out of the hair after severe illness depends merely upon a nutritive disturbance of the hair-follicles, not upon a wasting away of the same. Therefore the hair grows again as soon as these nutritive disturbances cease.

A want of pigment in the hair makes it gray and white.

III. HYPERÆMIA AND ANÆMIA OF THE SKIN.

A *stagnation* of blood in the cutaneous capillaries, in consequence of heart disease, causes *cyanosis*.

Hyperæmia, or *congestion* of the skin, characterized by redness of the skin, is caused by exposure to heat; by the application of different irritating substances, such as mustard, cantharides, mezereum, etc.; by a blow or fall; by the different exanthematic diseases, and fevers of different descriptions.

Anæmia of the skin, characterized by great paleness of the skin, is always associated with a general anæmic state of the system; moreover, it is induced by exposure to cold, and is quite a characteristic sign of chills.

IV. DERMATITIS, INFLAMMATION OF THE SKIN.

1. Erythema.

Erythema is characterized by a diffused redness of the skin, which, under the pressure of the finger, disappears, and leaves not a white, but a yellowish spot, which at once grows red again. It gradually disappears and is followed by desquamation; it is always attended with more or less burning pain. Erythema is caused by exposure to heat, the rays of the sun, and by different irritating substances. When it occurs in small children between the folds of the skin around the neck, behind the ears, between the thighs, etc., or in fat women under the dependent breasts, and becomes raw, it is called **Intertrigo.** It is found also between the buttocks, in consequence of friction from walking in hot weather. When erythema is the consequence of pressure from lying long in one position, as in severe illness upon the os sacrum, trochanters, or other prominent parts of the body, it is called **Decubitus.** So, also, do we observe erythema, in consequence of acrid discharges from the eyes, nose, bowels, and genitals upon the adjacent parts.

Besides all this there is an erythema, which, without any apparent cause, appears spontaneously upon the back of the hands and feet; in rare cases it spreads over the face and trunk, but never without, at the same time, showing itself upon the back of the hands and feet. It appears in these localities as an evenly diffused redness and swelling, which, after a short time, becomes covered with smaller, or larger, dark red, or even purplish-colored papulæ, **Erythema papulatum seu tuberculosum.** It is always attended with an annoying burning pain, and in some cases with feverishness. After a few days the redness, swelling, and papulæ disappear, and the whole morbid process winds up with desquamation of the cuticle in the course of eight or fourteen days. In some cases it lasts longer, when repeated crops of papular eruptions follow each other in succession and on different localities.

The **Erythema nodosum** appears almost exclusively on the lower extremities of young persons. Upon the reddened skin lumps of the size of hazelnuts or walnuts appear, which are painful to the touch and have a great similarity to bruises, changing their color from red to purple, then to blue, and lastly to green and yellow. This form is always attended with feverishness and ends with desquamation after eight or fourteen days; only in rare cases new crops follow.

THERAPEUTIC HINTS.—Intertrigo of infants between the thighs, when attended with acrid diarrhœa, compare Borax, Chamom., Mercur., Rhus tox., Sulphur.

When behind the ears, Graphit., **Petrol.**, Sulphur.

In general, Lycop.

Erythema from exposure to the rays of the sun, Acon., Camphor, Canthar.

Decubitus, Arnica. Carb. veg., China, Fluor. ac., Sulph. ac., etc. Compare the corresponding chapters.

Erythema from acrid discharges, compare the corresponding chapters.

Papulous erythema, compare Acon., Bellad., Laches., Mercur., Rhus tox., Sulphur.

Erythema nodosum, compare Arnica, Mezer., Laches., Ledum, Lycop., Ptelea trif., Rhus ven., Sulph. ac., Sulphur.

2. Herpes.

The different forms of herpes are characterized by an exudation, usually of a watery substance, beneath the epidermis, forming globular vesicles which are arranged in clusters upon an inflamed patch of the skin, and terminate frequently in the formation of a thin incrustation, without leaving scars.

The **Herpes facialis** appears on the face; when on the cheeks and upon the eyelids it is called **Herpes phlyctænoides**, when upon the lips, **Herpes labialis**, or **Hydroa febrilis** (fever-blisters). This latter form is a frequent attendant upon croupous pneumonia, intermittent fevers, and other febrile diseases. It scarcely ever occurs in typhus.

A special treatment is not required, but its presence may suggest **Bryon., Graphit., Hepar, Natr. mur.** (especially in intermittent fevers), **Rhus tox., Sulphur.**

The **Herpes præputialis** appears from preference on the prepuce, but also on the scrotum, penis, and on the outer parts of the female organs. Its appearance in clusters of globular vesicles, which are soon covered with a thin crust, distinguishes it at once from chancre.

Hepar or **Mercur.** are almost always sufficient for its removal, and in case of violent itching and burning in females, **Calad. seguinum.**

The **Herpes Zoster**, or **Zona**, or **Shingles**, is characterized by its peculiar way of spreading along the course of certain cutaneous nerves. When it appears on the thorax, the cluster of vesicles occupy the space in which one of the spinal nerves takes its course, commencing near one of the vertebræ and running around on one side of the trunk towards the sternum, thus forming a kind of belt around one-half of the thorax. When it appears on the neck, it forms not only a ring around one side of the neck, but appears likewise upon the trunk and the upper arm, corresponding to the course of the cervical nerves and the brachial plexus. In cases where it starts from the lower lumbar vertebræ, it spreads in a similar manner upon the thigh. Quite seldom is zoster found in the face, and then it occupies one-half of the face in the shape of a belt. Zoster is almost always preceded by rheumatic pains in the parts affected, by fever and debility. There is burning in the parts, then follows redness, upon which gradually clusters of vesicles appear, which often coalesce. In the course of four or six days they form into crusts. This terminates the attack, unless new and fresh crops of vesicles should break forth. The burning pain usually commences to leave when the eruption is fully out, and disappears entirely with the falling off of the crusts. Not unfrequently, however,—and this is quite a peculiar feature of zoster—there is developed, after all seems well, an intercostal neuralgia, which is very painful and often quite obstinate. Sometimes the vesicles are converted into deep-seated pustules, leaving scars behind them; or they become infiltrated with bloody serum. The duration of zoster is from 12, 14 to 30 days, according to the degree of the inflammation and the general condition of the patient.

THERAPEUTIC HINTS.

Arsen., severe, burning pain, worse at night, and great restlessness.

Canthar., on right side.

Cistus, on back.

Comocladia, on legs.

Crot. tigl., itching and painful burning and redness of the skin; formation of vesicles and pustules; desiccation, desquamation and falling off of the pustules—a close picture of zoster.

Euphorb., burning in the face; inflamed cheeks, with boring, gnawing and digging from gums to ears, and itching and tingling in the cheeks.

Graphit., especially on the left side.

Iris vers., on right side, with following gastric derangement.

Kalm. lat., facial neuralgia after zoster.

Laches., in spring and fall.

Mercur. is said by some to be a specific for relieving the burning, and preventing the appearance of new crops. Right side, extending across the abdomen.

Mezer. is strongly recommended, and said to prevent and cure the succeeding neuralgia intercostalis.

Pulsat., where there is gastric derangement; evening aggravation, and a mild, yielding, tearful disposition.

Ranunc. bulb., preceding neuralgia intercostalis.

Rhus tox., where there is fever, restlessness and burning-itching.

Thuja, suppressed gonorrhœa; burning after scratching.

Zincum, with lancinating pains; suppurating herpes.

Herpes circinnatus (*ring-worm*) is characterized by its circular form. The vesicles, usually much smaller than in other forms of herpes, appear in the form of a circle, the centre of which is fading, while on the periphery the vesicles are spreading. Sometimes, however, there is one larger vesicle, which not unfrequently is filled with a bloody fluid, right in the centre of the ring, and around the ring appears still another larger ring. This form is called **Herpes iris**, and is usually found upon the back of the hands or feet, on the fingers or toes, less frequently on the arms, thighs or face. Many forms of these eruptions are caused by vegetable parasites.

THERAPEUTIC HINTS.—Compare Calc. carb., Hydrast., Natr. carb., Natr. mur., Sepia, Tellur.

3. Urticaria, Nettle-rash.

This affection is characterized by prominent and perfectly

smooth patches upon the skin, the color of which is either redder or whiter than the surrounding skin. They are formed by a serous infiltration of the *papillary layer* of the cutis. The causes of these eruptions are numerous. As such we may mention— 1. *Various external irritations*, such as contact with nettles, or with some kinds of caterpillars and mollusks; the sting of fleas, bed-bugs, mosquitoes, bees; scratching with the finger-nails. 2. *Intestinal irritations* from eating strawberries, crabs, clams, mushrooms; from taking copaiva-balsam. 3. *Uterine irritations*, during pregnancy; menstruation; different uterine diseases, and after the introduction of pessaries.

Entirely unknown are the causes of **Urticaria febrilis**, which is chiefly attended by digestive disturbances, and has in its course and progress great similarity to other exanthematic fevers. I have often observed that symptoms which simulated croup, asthma or different other complaints, all at once disappeared as soon as nettle-rash made its appearance upon the skin. We also find it associated with chills and fever, and other febrile complaints. In some cases it assumes a *chronic form*, when it is quite difficult to get rid of it.

THERAPEUTIC HINTS.—**Anac.**, from emotional causes.

Ant. crud., thick, white-coated tongue; gastric derangement.

Apis, stinging, burning; croupy cough; uterine catarrh.

Arsen., burning; chills and fever; alternating with croup and asthma.

Bellad., during profuse menstruation; after eating cabbage or sour-kraut.

Berber., heartburn, with soap-sud taste in mouth.

Bryon., fever and rheumatic pains, worse from motion.

Calc. carb., fat, plump children; teething period; chronic form; rash disappears in the fresh air.

Dulcam., itching; after scratching, burning; after taking cold; griping pain in the bowels, with nausea and diarrhœa.

Hepar, chronic cases; eruption on hands and fingers; during intermittent fever; disguised croup.

Ignat., during the chilly stage of intermittent fevers.

Kali carb., during menstruation; swelling of parotid glands.

Lycop., chronic cases.

Pulsat., during delayed and scanty menses; rheumatic tendency.

Psorin., after suppressed itch, frequently repeated attacks of

urticaria, with fine vesicles on the top, which dry and peel off in fine scales; appearing regularly after any exertion.

Rhus tox., itching, burning; skin swollen and red; after getting wet; worse in the cold air; rheumatic pains, worse during rest; fever; thirst.

Sepia, chronic; breaks out during a walk in the cold air and disappears again in the warm room; especially on the face, arms and thorax; uterine troubles.

Sulphur, chronic cases; worm symptoms; rheumatism; frequently indicated after Pulsat.

Urtica urens, without any concomitant symptoms.

Ustil., itching at night; ovarian irritation, with menstrual irregularities.

4. Eczema, Vesicular Eruption.

Eczema consists in a diffuse, superficial dermatitis, which causes numerous little vesicles upon an inflamed, irregular surface; sometimes these vesicles are intermingled with pustules (*impetigo*), at other times the exudation may not be abundant enough to raise the epidermis into vesicles, but only loosens it, so that it dies off and forms a scaly surface; or the epidermis is actually thrown off, leaving a raw, moist surface behind (*intertrigo*), which, in some cases, becomes covered with a thin scurf, in others with a thick crust.

Its CAUSES are—1. *Direct irritation of the skin* by too high a temperature (*baker's itch*); hot baths; the application of wet bandages; the rubbing in of mercurial salve or croton oil; and by various other irritating substances.

2. *Stagnation of the venous blood within the capillaries.* As this takes place most frequently on the lower extremities, we find the consecutive eczema there also, in the form of *salt-rheum.*

3. *A dyscratic diathesis* of scrofulous or rhachitic individuals; in overfed, plumb children.

4. In many cases we cannot trace it *to any cause.*

It chooses as favorite localities: *the scalp*, where it is called *tinea furfuracea*, if it causes merely a separation of the epidermis in fine scales; or *tinea amiantacea*, if the dried exudate and the loosened epidermis form a kind of asbest-like layer upon the inflamed surface. Such peeling-off processes are known under the name of *dandruff.* But it may also form thick crusts, matting the hair together (*tinea capitis*).

When the eruption commences with vesicles and violent itching: **Rhus tox., Merc. sol., Lycop., Arsen., Crot. tigl.**

When attended with swelling of the glands of neck and nape of neck: **Baryt. carb., Sulphur, Calc. carb., Conium.**

In rhachitic individuals: **Sulphur, Silic.**

When forming out of nodes and pustules with thick crusts: **Hepar, Calc. carb., Graphit.**

In scrofulous subjects: **Baryt. carb., Calc. carb., Sulphur, Silic., Phosphor.** (Kafka.)

The face. Here it occurs in all forms and has received many different names: *eczema impetiginosum*, when intermingled with pustules; and *rubrum*, when growing upon an inflamed, red surface; *porrigo larvalis*, when forming thick crusts; *tinea faciei*, *crusta lactea*, when appearing during lactation; *crusta serpiginosa*, etc.

The genital organs, in males the *penis* and *scrotum*, and in females the *labia majora*. It is either acute or chronic; the latter especially when on the scrotum. By its terrible itching it drives one almost to madness. It may appear also upon the perineum, and around the anus.

The inner side of the thigh, just where the scrotum touches it. This is called *eczema marginatum*, and has been observed especially in shoemakers and cavalry-men. It commences on the inner side of the thighs, just where the scrotum touches it, but soon appears also on the corresponding place of the other thigh.

The legs. Here it forms a large, red, raw, constantly secreting surface, sometimes ulcers covered with thick crusts. This is called *salt-rheum*. When the ulcers heal, the skin appears thickened and is usually of a darker color from alteration of the pigment.

The bends of the extremities. The scanty exudate generally dries with the loosened epidermis, and forms a brittle covering which, on motion of the limbs, cracks in different directions. Sometimes the secretion is more profuse, and keeps the affected parts constantly moist.

Hands and feet. It is a peculiar fact, that the hands and feet are attacked almost always simultaneously. When it appears on the dorsal side, it generally assumes the form of simple eczema or vesicles, and may be confounded with itch. On the palms of the hands or soles of the feet it scarcely ever occasions vesicles, but causes the epidermis to peel off in the form of white scales, for

which reason it has been called *psoriasis* or *pityriasis palmaris* or *plantaris*. It is also found on the external ears, on the eyelids, on the trunk, on the nipples of nursing women ("sore nipples"), on the navel, in the axillæ, in the inguinal region of children, between the toes in consequence of sweating. The progress of the disease is seldom acute; all forms are characterized by great itching; scratching is apt to spread the affection further.

THERAPEUTIC HINTS.—In selecting the remedy for such affections, the constitutional spmptoms must never be lost sight of. I can give hints only to local symptoms, as the other would lead too far, and still could not meet all the possible complications.

Eczema *on the scalp*, compare:

Arsen., generally dry, scaly eruption, sometimes fetid, purulent secretion, with nightly burning or terrible itching; better from external warmth.

Baryt. carb., moist crusts, with falling off of the hair; glandular swellings on the neck and under the lower jaw.

Calc. carb., thick crust, moist or dry, with scrofulous diathesis.

Clemat., the eruption inflames during the increasing, and dries up during the decreasing moon.

Cicuta, with itching, or burning, or both; the secretion from the vesicles forms a yellow, thick crust, which mats the hair together. Also on chin. (C. Wesselhoeft.)

Graphit., impetiginous eruption; soreness after scratching; worse on left side, and in the evening; sticky secretion.

Hepar, purulent secretion, itching and sore; worse in the morning, and on the right side; unhealthy skin, even slight wounds suppurate.

Lycop., thick crusts, with fetid secretion underneath; bleeds easily after scratching.

Mercur., yellow crusts, stinging, burning; the surroundings inflame easily after scratching.

Natr. mur., raw, inflamed surface, continually discharging a corroding fluid, which eats away the hair; on the boundaries of the hair.

Rhus tox., thick, moist crusts; tingling, stinging, burning, especially at night.

Staphis., yellow, acrid moisture oozes from under the crusts; upon the denuded surface new vesicles form at once which burst. By scratching one place the itching ceases, but appears in another place.

Sulphur, crusts and pimples itch spontaneously, especially at night; bleed easily.

Besides, compare Anacard., Ant. crud., Borax, Bromium, Cicuta, Cyclam., Dulcam., Kali bichr., Lappa, Nitr. ac., Oleander, Phosphor., Sepia, Silic., Thuja, Viola tric.

Eczema *on the face*, compare Arsen., Bellad., Borax, Calc. carb., Clemat., Cicuta, Crot. tigl., Cylam., Dulcam., Graphit., Hepar, Iris, Lycop., Mercur., Mezer., Natr. mur., Rhus tox., Sarsap., Sepia, Staphis., Sulphur, Viola tric.

Eczema *on the genital organs*, compare Arg. nitr., Arsen., Calad., Crot. tigl., Graphit., Hepar, Lycop., Natr. mur., Nitr. ac., Petrol., Rhus tox., Sepia, Sulphur, Thuja.

Eczema marginatum, compare Natr. mur., Sepia, Sulphur.

Eczema *on the legs, salt-rheum.* As this affection is the result of stagnation in the venous circulation, it will be a great service to bandage the limbs tightly. Among the remedies compare Arsen., Calc. carb., Carb. veg., Graphit., Laches., Lycop., Mercur., Natr. mur., Pulsat., Rhus tox., Sarsap., Sepia, Silic., Sulphur.

Eczema in the bends of the extremities, compare Amm. carb., Bryon., Calc. carb., Graphit., Ledum, Mercur., Sepia, Sulphur.

Psoriasis, or pityriasis palmarum, or plantaris point to Magn. carb., Ran. bulb., Rhus tox., Sepia, Sulphur.

5. Impetigo, Pustular Eruption.

It differs from eczema only by its pyogenic tendency. As, however, the contents of eczema vesicles frequently become milky and purulent, no distinct line of demarcation can be drawn between these two skin affections. In fact, many of the eruptions cited under eczema of the scalp and face may, with equal propriety, be classed under impetigo. Its causes are the same as those of eczema. In addition, we find this form especially in scrofulous subjects, in whom there is a great vulnerability of the skin, so that any little irritation or wound of the skin at once begins to fester. We also find it sometimes after vaccination sprouting forth over the body.

Impetigo contagiosa.—The eruption is attended with fever; a part of the skin reddens, burns and itches, and now little vesicopustules appear, which in five or six days reach the size of a split pea or a hazel nut; they are generally umbilicated, and form after a while yellowish straw-colored crusts, which look as if

stuck on. The eruption may remain confined to the forehead and cheeks, but frequently extends further. The scratching with the nails is especially apt to spread the affection, and it may, in this manner, be transmitted to other persons.

THERAPEUTIC HINTS.—All that has been said under eczema is applicable here. All the constitutional symptoms must be considered. If Hebra and his echoes assert that it be pure imagination of an erroneous idea of the natural processes in the human body to suppose that eczema, if cured by external means (*id est*, by being suppressed by green soap, Kali causticum, Tar, etc.), could ever do any harm, we leave them to grow wiser by closer observation, and stick to old Hahnemann and our own experience. There is no distinct line of demarcation between eczema and impetigo. The latter is admitted by Hebra himself to be in connection with a scrofulous diathesis; why not the eczema? If the one be the expression of a general contamination of the system, why not the other? But it is so much easier to cut off the fruit of a tree than to root out the tree itself.

For **Impetigo contagiosa**, Dr. Kippax in his hand-book of skin diseases gives the following hints:

Ant. crud., is the main remedy.

Acon., if there is much febrile disturbance.

Euphorb., when there is an irritable skin, with swelling of the face, and pea-sized yellow vesicles.

Kali bichr., stands next to Ant. crud.

Tart. emet., when the disease is exceedingly pustular.

Thuja, after vaccination.

Silic. and **Kali nitr.**, are at times indicated.

6. Ecthyma, Isolated, Large Pustules.

Upon a red and swollen surface single pustules appear, of the size of a pea, which contain a *yellow*, purulent, or *dark-colored* fluid, if there be blood mixed with it. They are surrounded by a red areola, and appear most frequently upon the extremities, on the seat, on the chest, and on the neck, less often on the face. Ecthyma is almost always attended with stinging pains, and in irritable persons with slight fever. In the course of a few days the pustules dry up and form round, brownish crusts which, when being removed, leave more or less extensive excoriations,

resulting in temporary scars and pigmentation. In chronic cases the disease is protracted by successive crops of pustules for a long time.

We meet it at any time of life, and especially in consequence of protracted diseases, poor living, and cachectic conditions.

THERAPEUTIC HINTS.—Compare Ant. crud., Arsen., Calc. carb., Cicuta, Cyclam., Kali bichr., Laches, Lycop., Merc. sol., Nitr. ac., Piper nigr., Secale, Silic., Sulphur, Tart. emet.

The general constitutional indications must never be lost sight of.

7. Pemphigus, Pompholyx, Isolated Large Bullæ or Blisters.

Upon a red, inflamed, but not infiltrated surface, pretty large blisters appear, which are filled with clear serum and greatly resemble those occasioned by burns or fly-blisters. About their causes nothing is known, except that if they occur in new-born children they are of a *syphilitic* origin, and in grown persons they are symptoms of some general dyscrasia or cachexia.

The acute form of this affection is extremely rare. It is always attended with pretty high fever, and general indisposition, and lasts about fourteen days. Renewed outbreaks may prolong it much longer. The chronic form of pemphigus, which may grow out of an acute attack, lasts months and even years. One crop after another appears upon the skin, showing the bullæ in all the phases of their development; the youngest are transparent, the older have a milky appearance; they burst and leave an excoriated surface. This raw surface still continues to secrete serum, and is finally covered with a thin crust. The worst form is **Pemphigus foliaceus.** It begins with a single blister, which is continually increasing, until the whole surface of the body is literally skinned and then covered by a brownish crust. It often takes a fatal termination.

THERAPEUTIC HINTS. — Compare Arsen., Bellad., Canthar., Caustic., China, Dulcam., Kreosot., Laches., Mercur., Phosphor., Ran. bulb., Rhus tox., Sepia, Sulphur, Thuja.

8. Rupia or Rhypia, Isolated Blisters, which form thick Crusts.

The bullæ contain a purulent reddish matter, which gradually dries and forms a thick, dark crust. Underneath this crust matter continues to form, which again dries and consequently raises the centre of the crust, while on the periphery it becomes encircled by a vesicated border, which also dries up into a crust. And as this latter is much thinner than the first, which has been successively heaped up, the whole assumes a great similarity to an oyster-shell. On removing the crust we find a deep, foul, excoriating ulcer. Rupia is a late and malignant manifestation of syphilis.

THERAPEUTIC HINTS.—Compare Syphilis.—Berjeau gives the following hints:

Clemat., growing worse during the increasing moon; discharge of a sanious pus, yellow and corrosive; burning and tingling in the ulcer; itching worse at night in bed.

Mercur., violent itching, worse in bed; ulcerating pimples; desquamation of the skin; excoriations of a tettery nature, which are oozing constantly and bleed easily when scratched.

Nitr. ac., after mercury; copper-colored spots; watery, bloody secretion.

Sarsap., also after the abuse of mercury; purulent vesicles, itching; depression of spirits. Especially in the spring.

Sulphur, scabious eruptions with burning itching, surrounded by a yellow or brownish areola; secretion of a sanious, fetid or thick and yellow pus; spots covered with small vesicles, discharging serous lymph.

Thuja, brown or red mottled spots, with itching shootings in the evening; purulent pimples, containing fluid-like varnish.

9. Furunculus, Boil.

A furuncle commences as an inflammation of one or several closely-grouped cutaneous glands, or hair-follicles, which become infiltrated. By-and-by the inflammation spreads to the surrounding cellular tissue, and through the entire skin, suppuration takes place, and, accompanied by acute pains, and at times fever, the boil breaks and discharges a bloody matter; the core (which consists of destroyed cellular tissue), however, is not discharged

until all of it has been loosened from its surroundings. Large boils generally occur singly; small ones, so-called *blind boils*, which discharge very little, or nothing at all, frequently appear in crops, or in rapid succession, and may torture a patient for a considerable length of time. Their exact cause is unknown, but they seem to depend upon some depraved state of the blood in the general system, they frequently appear during the reconvalescence from severe illness, and at times as epidemics.

THERAPEUTIC HINTS.—Never use the lancet nor allow it to be used, because it never does any good, but always harm, as it increases the inflammation and protracts the healing process.

For *large* boils, compare Apis, Crotal., Hepar, Laches., Lycop., Mercur., Nitr. ac., Silic., Stramon.

For *small* ones, Arnica, Bellad., Nux vom., Sulphur.

For a *disposition* to boils, Arsen., Calc. carb., Lycop., Nux vom., Phosph. ac., Plumbum, Silic., and Sulphur.

10. Carbunculus, Carbuncle.

The carbuncle is a phlegmonous dermatitis, and commences with severe pains in the part affected, which are mostly of a burning character, and continue to be so through the whole course. The painful spot commences to swell, to harden, to discolor; it generally assumes a purplish hue. After five or six days numerous little holes form in the swollen and discolored place, from which a yellowish mattery substance projects. The swelling and hardness still continue to increase in circumference. Only a little pus is discharged from the small holes. They, however, gradually widen and coalesce, until by degrees a considerable portion of the cutis is entirely destroyed; or the epidermis is raised in the form of a gangrenous blister, which finally breaks. We now observe the necrosed cellular tissue underneath; the pus discharges more copiously, and with it large pieces of destroyed tissue slough off. The loss of substance sometimes amounts to several square inches. This process is always attended with considerable fever, and is quite apt to assume an adynamic character. When complicated with cerebral symptoms, which are the consequence of the absorption of the pus by the blood, it may terminate fatally. In favorable cases new granulations appear at the bottom of the wound, and

by a slow healing process the whole lost substance is finally restored.

Carbuncle differs entirely from furuncle. It is of a much more destructive character, appears principally on the nape of the neck, or along the spine, on the forehead, or buttocks, and chiefly attacks aged persons, while furuncle is never associated with gangrenous destruction of substance, it appears here and there and everywhere, and attacks all ages alike.

THERAPEUTIC HINTS.—No knife. But compare:

Anthrac., when the burning pain is violent and not relieved by Arsen.; cerebral symptoms; absorption of pus by the blood; gangrenous destruction. A carbuncle on the back of a man, some sixty years of age, had attained the size of nine inches in length, and five inches in its greatest width. There was sloughing, abundant discharge of ichorous, terribly smelling pus, and poisoning of the blood by absorption of pus. Arsen. had no beneficial effect; Anthrac. relieved at once. Ever since then I have given Anthrac. in several cases, where there were symptoms of the same destructive character, with the same beneficial result.

Apis, when the erysipelatous inflammation extends further and further.

Arsen., great burning; great restlessness; great thirst, drinking but little at a time; great debility; all the symptoms are worse in the night, and better from external warm applications.

Bellad., bright redness; throbbing pain; drowsiness, with inability to go to sleep.

Carb. veg., dark, blackish appearance; fetid odor; hippocratic face.

Kreosot.

Laches., bluish, purplish appearance; inability to bear any bandage around the neck; cerebral symptoms.

Nitr. ac.

Rhus tox., great restlessness; feels somewhat relieved of the violent pain as long as he is in motion.

Secale, cannot bear external warmth.

Silic., during the process of ulceration; it seems to clear the wound of its decayed masses, and to promote healthy granulation.

11. Pustula Maligna, Malignant Pustule,

also called Carbunculus contagiosus, is characterized by the appearance of an angry-looking pustule, associated with gangrenous destruction of the surrounding parts, which owes its origin either to a direct inoculation of the poison from an animal affected with the disease called *Anthrax*, *Milzbrand* or *Charbon*, or to a transmission of the poison by flies, or to inoculation of the poison from man to man, or to the eating of the flesh of diseased animals. It is therefore most frequently found among persons who have to do with diseased animals, or who work in manufacturing establishments, where the products of such animals (hides, horsehair, wool) are prepared for different uses. The infection takes place principally on the uncovered parts of the body which are exposed to the entrance of the poison. The eating of diseased flesh first causes general malaise and intestinal troubles, after which, in about eight or ten days, anthrax carbuncles appear, by preference on the arm, forearm and head.

After an incubation of from a few hours to several days, there is at first felt on the spot where the poison took hold, a slight burning and itching, as if from the bite of an insect, and one can see a little red speck with a black point in its centre. This soon becomes changed into an itching papule, capped with a small, generally reddish or bluish vesicle, which gradually enlarges. After bursting it discloses a dark red base, which becomes covered with a crust, while often, though not always, secondary vesicles spring up around it, which contain a yellowish, reddish or blackish fluid. At the same time the surrounding parts swell œdematously over a considerable area, the cellular tissue underneath also becomes infiltrated, and in many cases discolored lines mark the course of the veins, or red stripes the course of the lymphatic vessels in the œdematous region; the corresponding lymphatic glands also swell. The general symptoms correspond with the severity of the local affection; there is fever, great weakness, delirium, excitement, confusion; sweating, diarrhœa and pain in the extremities; in fatal cases collapse; in favorable cases after the dead masses have been removed by sloughing off, the wound gradually heals by healthy granulation.

THERAPEUTIC HINTS.

Laches., bluish color of the pustule, and red streaks along the lymphatic vessels. (Dunham.)

Anthrac., blood-poisoning.

Malandrinum, blackish diarrhœa; pain in back and limbs; pustule similar to a badly-looking vaccine-pustule. (R. Straube.)

Compare Carbuncle.

12. Epithelioma, Epithelial Cancer.

It usually begins as a little tubercle, or flat infiltration, which sooner or later cracks and ulcerates, forming a roundish sore with indurated edges, and a thin scanty secretion, that sometimes covers the ulcer with a brownish or yellowish crust. At an advanced stage the edges become undermined and bleed easily, the base assumes a dirty or grayish, more or less papillated aspect, secreting an offensive, pale, yellowish, viscid fluid. At other times the epithelioma develops in the form of warts or cauliflower excrescences of various sizes, which ultimately break down and form irregularly shaped ulcerating excavations which bleed easily. The first or roundish form infects by preference the lower lip; if occurring on the upper two-thirds of the face, it constitutes the *rodent ulcer* of English writers, and when originating on the scrotum, it is termed **Chimney sweeper's cancer.** It is, however, also found on the tongue and mucous membrane of the cheeks, and may appear on any part of the body. The second form, of cauliflower appearance, attacks by preference the vulva, clitoris, penis and rectum, and might be mistaken for a syphilitic affection if it were not for the history of the case.

The course of epithelial cancer is sometimes slow, sometimes rapid. It sooner or later involves the lymphatic glands, is attended by sharp, lancinating pains, and if left alone destroys life, by exhaustion, in from two to five years.

THERAPEUTIC HINTS.—The main remedies seem to be: Arsen., Calc. oxal., Hydrast., Phytol., Sepia, and Thuja. An external application of the well-chosen remedy at the same time will often be of great service.

13. Panaritium, Paronychia, Whitlow, Run-Around, Felon.

It is an inflammation of the thumb or of one of the fingers, which terminates in suppuration. There are two distinct varieties of this inflammation, a superficial and a deep-seated one.

The *superficial* form, **Whitlow, Run-Around,** is generally seated immediately around and beneath the nail, commencing either at the side of the finger, upon its dorsal surface, or at its extremity. Without much, if any swelling, the part is of a dusky reddish aspect, tender on pressure, and exquisitely painful, throbbing violently and incessantly, and causing more or less constitutional disorder. Two or three days after these phenomena present themselves, matter is observed beneath the epidermis, which is elevated into a yellowish vesicle at the side and root of the nail. In many cases pus is also situated beneath the nail, especially at its posterior extremity; and sometimes, again, it is found chiefly, if not exclusively, in the cellular substance, immediately beneath the true skin. The inflammation generally extends some distance up the finger, and occasionally even over a considerable portion of the hand, which may be considerably swollen, stiff and painful. Not unfrequently a reddish line, indicating the course of an absorbent vessel, is seen running along the limb, as high up, perhaps, as the axilla.

In the *deep-seated variety,* **Felon,** the inflammation involves all or nearly all the structures of the finger, and is frequently followed by the destruction of one or more of the phalanges. The pain is of extraordinary severity, depriving the patient of sleep for days and nights together, throbbing, tensive and diffused, often extending as high as the elbow, and even to the shoulder, steady and persistent, but greatly aggravated by a depending position, and only subsiding with evacuation of the inflammatory deposits, or the death of the parts. The swelling also is great, sometimes enormous, involving both finger, hand and wrist; the skin is red and œdematous, puffy, erysipelatous in aspect, and the whole limb is often stiff and useless. In consequence of the inflammatory action, pus forms deep among the tissues, in the connecting cellular substance, within the sheaths of the tendons, and beneath the periosteum; and spreading in all directions, causes extensive destruction, burrowing along the finger and hand. In neglected cases even gangrene may occur, followed by sloughing of the tendons, and exfoliation of the phalanges. This grave form is always attended with well-marked constitutional disturbance. The patient, tortured with pain, is feverish and unable to sleep; his appetite is lost; his head, back, and limbs ache; the face is flushed, and the pulse is strong, hard and frequent. In some cases delirium is present. (Gross.) Causes unknown; no doubt of a psoric nature.

THERAPEUTIC HINTS.—**Amm. carb.** I have seen the nightly pain which had deprived the patient of sleep for several nights, relieved in a few hours, and the morbid process staid at the same time by one or two doses of Amm. carb.[500]

Anthrac., where there is sloughing, with terrible burning, and when Arsen. gives no relief.

Apis, according to Wolf, specific especially after the abuse of Sulphur; the characteristic pain is burning-stinging.

Arsen., when the sore assumes a gangrenous aspect; burning like fire, with anxious restlessness; worse about midnight.

Bryon., in the commencement, where there is a gastric-rheumatic disposition; white or yellowish-coated tongue; dry feeling in the mouth, without thirst, or great thirst; bitter taste in the mouth; dry, hard stool, as if burnt.

Caustic., recommended by Goullon, to be used externally and internally.

Graphit., according to Kreussler, superficial inflammation about the root of the nail, with burning and throbbing pain, and subsequent inflammation and proud-flesh.

Hepar, violent, throbbing, "gathering" pain; it accelerates suppuration.

Juncus eff., recommended by Minnichreiter, who applied the pith of this plant upon the panaritium with the greatest success.

Laches., according to Hering, in severe cases, where the inflamed portion assumes a purplish hue, or becomes gangrenous.

Ledum, when the whitlow is the consequence of the prick of a needle, a splinter, etc.

Lycop., when there are the following constitutional disturbances: frequent belching, bloatedness of the region of the stomach and belly; pressure and heaviness, and sometimes throbbing in the precordial region; burning in the stomach and œsophagus; nausea; sensation of twisting, crawling and emptiness in the stomach, accompanied by frequent yawning; congestion to the head; cold feet; dry stool; red, burning urine; mental irritability.

Maland., suppuration of all the finger and toe-nails. (Straube.)

Mercur., when the inflammation extends to the sheaths of the tendons and ligaments of the joints, and in superficial whitlows.

Natr. sulph., suppuration at the root of the nail, with deep-red swelling of the whole phalanx, and great painfulness; the patient looks sickly and pale; feels weary and dull in the head,

especially in the morning; has no appetite, and is chilly and feverish in the evening; the pain is easier out-of-doors than indoors. Prominent causes: damp region, damp walls, damp cellars.

Rhus tox., where there are rheumatic pains in the limbs; worse during rest and on beginning to move; sensation in the limbs as of going to sleep, and formication; tired feeling, and sweating from any little exertion; erysipelatous redness of the inflamed part.

Sanguin., suppuration of the roots of all the finger-nails.

Silic., deep-seated inflammation; affection of the bone; proud flesh; terrible pain; worse in bed; very important after Hepar.

Stramon., is most important when the pain is almost unbearable, driving to despair. It ameliorates it at once, and hastens benign suppuration.

Sulphur, according to Wolf, when Apis is not sufficient on account of latent psora.

14. Psoriasis.

It consists in a chronic dermatitis, with infiltration of the corium and a morbid condition of the epidermis. The effusion upon the corium is not abundant enough to raise the epidermis into vesicles. It causes a mere hyperæmia of the skin, in consequence of which the papillary layer produces a sickly epidermis, which soon loosens and drops off in scales. Its *causes* are quite obscure. In some families it is hereditary. Quite young children, and quite old persons are seldom attacked by it. This affection commences in small, red, somewhat elevated, roundish spots, like drops, which are soon covered with dry, oblong, white scales—**Psoriasis guttata.** When the spots increase in number, they necessarily coalesce as they grow, and form large irregular surfaces, which are covered with scales of various thickness and adhesiveness—**Psoriasis diffusa** of *Willan.* They sometimes accumulate in round patches. While on the periphery new spots still appear, those in the centre dry up, and this gives rise to a circular eruption—**Psoriasis annulata** (*ring-worms*). Or, several of such circles meet, their peripheric lines are broken off by already healed up centres, and now they form various figures, parts of circles, straight lines, etc.—**Psoriasis gyrata.** In some cases this morbid process continues for a long time, and causes the skin to

become thickened, rigid and cracked. This takes place especially in the diffuse and irregular forms; then it is called **Psoriasis inveterata.** These different names are not to be understood as indicating different varieties, but forms and stages of the same cutaneous affection. The favorite places for psoriasis are the extensor sides of the extremities, especially the knee and elbow. In many cases the disease is confined to these localities. Frequently it appears symmetrically on both sides of the body, similar to eczema. Sometimes it is found on the eyelids, lips, prepuce, scrotum and labia majora. The so-called **Psoriasis palmaris** and **plantaris**, by which the redness and infiltrated surfaces of the palms of the hands and of the soles of the feet are covered with dry scales, belongs to eczema, and its circumscript form is always of a syphilitic origin.

THERAPEUTIC HINTS.—Compare Arsen., Calc. carb., Clemat., Corall., Cuprum, Fluor. ac., Hydroc., Iris vers., Mercur., Nitr. ac., Petrol., Phosphor., Phosph. ac., Phytol., Psorin., Selen., Sepia, Silic., Sulphur, Tellur.

15. Lichen.

One form, **Lichen simplex**, consists of little red papules, of the size of a millet seed, usually appearing on the outer parts of the forearm, sometimes on the back of the hands, on the neck and thigh. They appear mostly in summer time and are accompanied by itching.

The other form, **Lichen planus**, consists of dull red, flat-topped papules of the size of a millet seed, at first of a shiny appearance, but later covered with thin scales; their centre presents an umbilicated depression, the opening of a hair-follicle, and after their disappearance they leave at times a darkish stain or a little pit. They appear singly and in groups, and are found especially on the forearms, wrists, thighs, abdomen, and legs below the knees. The **Lichen ruber** of Hebra is commonly associated with marasmus.

THERAPEUTIC HINTS.

For **Lichen simplex** Kippax recommends: Alum., Amm. mur., Anather., Ant. crud., Arsen., Bellad., Bovista, Bryon, Castanea vesca, Calad., Iod. of sulphur, Kreosot., Ledum, Mercur., Nabulus

serp., Natr. carb., Nux jugl., Plant. maj., Phytol., Rumex, Sepia, **Sulphur.**, Tilia.

For **Lichen planus**: **Ant. crud.**, Agar., **Arsen.**, Chin. ars., Iodium, Iod. of sulphur, **Kali bichr.**, **Ledum**, **Nux jugl.**, Potass. iod., Sarsap., Staphis.

16. Prurigo, Pruritus.

Instead of conical pimples, as found in *lichen*, prurigo exhibits flat papules, which have the same color as the surrounding skin. When broken they discharge a small drop of a clear fluid, and are attended with an intolerable itching. Want of personal cleanliness, of the proper change of clothing, and poor and unwholesome food are probably its most frequent causes. Hebra asserts that it is found only in the poorer classes of the people. With the exception of the first years of childhood it is found in all ages, and more frequently in men than in women. The flat papules, which at first appear singly, and which may even be difficult to detect by sight, as they do not differ in color from the surrounding skin, cause a most terrible itching, which incites the person to scratch. Hereby the papules become denuded of their epidermis; they bleed, and the exuding blood forms dark crusts upon the scratched localities. Thus, it closely resembles in appearance the torn surface from scratching, in consequence of itch or lice. Prurigo, however, has favorite localities, differing from either itch or lice. While the acarus prefers to locate between the fingers, in the bends of the limbs, and on the belly, and lice take their abode in preference where the shirt lies in folds, on the neck, around the waist, etc., prurigo is found principally on the extensor sides, especially of the lower limbs and on the back; a feature decidedly distinguishing prurigo from itch. The finding of the acarus or of lice would settle the question. But even then there might be a complication between prurigo and itch. The spotted appearance of the skin is nothing but the necessary consequence of the violent and continued scratching. The skin being continually torn, simple crusts not only form, but the surface commences to fester and to cicatrize.

Milder cases of prurigo, where the disease is confined to the lower extremities, are called *prurigo mitis;* graver cases are called *prurigo formicans.* Those which are confined to the anus, penis, scrotum or vulva, *prurigo pudendorum*, are related to eczema.

The disease has its remission during spring and summer and its exacerbations during fall and winter.

The effects of prurigo upon the general organism grow the more apparent the longer the disease lasts. The constant unbearable itching, which destroys all comfort, rest and sleep, wears the patient out, and has led some to utter despair and suicide. There is also combined with this disease a remarkable tendency to rapid, serous exudations into the serous membranes of the brain and lungs, a tendency to aberrations of the mind and to tuberculosis.

Pruritus is a hyperæsthesia of the cutaneous nerves, frequently a reflex symptom, without any eruption, or an itching of the skin in consequence of some foreign material, like bile, coursing in the blood and irritating the cutaneous nerves, as in jaundice.

THERAPEUTIC HINTS.—**Arsen.**, Calc. carb., Carb. veg., Dolichos prur., Graphit., Iodium, Lycop., **Mercur.**, Mezer., Nitr. ac., Rumex crisp. (the itching is made worse by cold and better by warmth —H. Bernard-Hardenpont), Sepia, Sulphur.

The pruritus of pregnant women has been relieved by the smoking of a cigar.

17. Scabies, Itch.

Itch, namely, acarus-itch, is a dermatitis, which is caused by a parasite, called *acarus scabiei seu sarcoptes hominis*. This insect burrows itself into the skin in order to find shelter and to deposit its eggs. This causes the inflammation, which produces papules, vesicles and pustules. It is always attended with great itching, especially at night, when these animals are the liveliest, leave their holes and pay each other visits. One pregnant female acarus, if it be transplanted to another person, is sufficient to invest this person with the itch. Her eggs ripen in about eight or ten days; the youngsters creep out and do exactly as the old ones did; the mischief is done. Infection takes place, therefore, most readily if one happens to sleep with another who has the itch; but also by shaking of hands, by clothing, by using the same towel, etc., the female acarus may be transplanted. The fact makes itself known first by an intolerable itching on those parts, which the acarus seems decidedly to prefer, namely the hands, especially between the fingers, the cleft of the nates, the

bends of the extremities, the abdomen, and the genital organs, never the face. It seems that this terrible itching is caused not only by the action of the insect in burrowing itself into the skin, but also by an acrid juice, which it probably secretes. The objective signs which now follow are the above mentioned pimples, vesicles and pustules, on account of which the books speak of a *scabies papulosa*, *vesiculosa* and *pustulosa*. The most characteristic signs of acarus-itch are, however, the little furrows which are dug by the insects. They present dotted, irregular streaks, which have a great similarity to little scratches of a needle. At their commencement there is generally a vesicle, seldom a papule or pustule; at their end, a little way from the vesicle, the insect sits, appearing as a whitish speck. By carefully entering this small channel with a fine needle the perpetrator may be pierced and extracted.

Itch never heals spontaneously, and the more the insects multiply, the worse it grows. The original irritation caused by the insects, and the additional one by scratching, causes the whole eruption to assume the form of eczema and impetigo, with vesicles, pustules and crusts of different sizes.

GENERAL THERAPEUTIC REMARKS.—The old school considered it a great triumph when, in the year 1834, by M. Renucci, a young Corsican in Paris, who had learned in his native island the art of extracting the little animal, the question about the nature of itch seemed to be settled. Hahnemann's psora-theory had thus been exploded by a needle in a Corsican's hand, and with it, all Homœopathy! They simply forgot, in their heart's delight, that before that time many other cutaneous eruptions were considered as itch; amongst them, as Hebra himself supposes, prurigo, with its undoubted metastases to inner organs. If we now take a glance over Hahnemann's masterly picture of what he calls psora, we shall at once perceive that, under psora, he did not understand acarus-itch solely, but gave a tout ensemble of chronic cutaneous affections in general. The child had to have a name, and psora was as good a name as eczema, impetigo, prurigo, or any other. Thus the needle, although it found the acarus, altogether missed Hahnemann's psora. It is just as true to-day that a suppression of cutaneous eruptions, of various kinds, will be followed by disastrous consequences upon the general system, as it was true when Hahnemann and others observed it. Instead, then, of desiring to have Hahne-

mann's psora theory wiped out of the pages of Homœopathy as a disgraceful spot, we ought to be proud of our old master's keen observations. But then we must understand him rightly. I admit that, in recent cases of acarus-itch, the killing of the animal is the shortest procedure to cure, without detrimental effects upon the organism. This end may be attained not only by the external application of *sulphur and mercurial salves*, but also by *peruvian balsam* or the *twigs of the balsam poplar tree, populus balsamifera* (L.), *Tacamahac* (Ind.), which secretes a kind of resinous substance on the pedicles of its leaves and around its twigs. But as it is an undoubted fact that *itch never heals spontaneously*, and as we have likewise undoubted facts that it has been cured solely by the internal application of homœopathic remedies, it seems that those who contend that even acarus-itch in the course of time is not altogether a mere local, cutaneous trouble, are after all deserving some credit. All parasites, no matter whether animal or vegetable, can grow only upon a suitable soil; if this soil be made insupportable to them, they die or leave, and this is as good as killing, regarding the riddance of the intruders, but it is infinitely better for the patient, as by this means the organism is not injured, but brought into a healthy state.

SPECIAL HINTS.—**Arsen.**, inveterate cases; eruption in the bends of the knees; pustulous eruption; burning and itching; better from external warmth.

Carb. veg., eruption dry and fine, almost over the whole body, worst on the extremities; itching worst after undressing; dyspeptic symptoms; belching of wind and passing flatus; after the abuse of mercurial salves.

Caustic., after the abuse of sulphur and mercury; yellowish color of the face; warts on the face; involuntary discharge of urine when coughing, sneezing or walking; sensitiveness to the cold air.

Hepar, fat, pustulous and crusty itch; also after previous abuse of mercury.

Mercur., fat itch, especially in the bends of the elbows.

Psorin., inveterate cases; with symptoms of tuberculosis; also in recent cases; eruption in the bends of the elbows and around the wrists; repeated outbreaks of single pustules, after the main eruption seems all gone.

Sepia, after previous abuse of sulphur; itching worse in the evening; especially in females.

Sulphur, main remedy; voluptuous tingling-itching, with burning and soreness after scratching.

Sulph. ac., when itchiness of the skin and single pustules appear every spring, after an imperfectly cured itch.

18. Prairie Itch, Prurigo Contagiosa,

"Is an acute inflammation of the skin, appearing in new districts, where it may be for a time endemic. It may be preceded by the premonitory symptoms of malaise, headache and slight febrile disturbance; or its onset may be first marked by the appearance of erythematous points, covered with small transparent vesicles, varying in size from a pin's head to a mustard seed, and situated for the most part on the neck, shoulders, back and outer surface of the limbs. An intolerable nightly itching accompanies the eruption, creating an almost irresistible desire to scratch the parts. The scratching obliterates the vesicles, and gives rise to scratch-marks, and to the secretion of an exceedingly acrid, irritating fluid, which oftentimes indefinitely prolongs the disease. Large blackish crusts covering suppurating ulcers are an occasional result. Furuncles quite frequently complicate the trouble." (Kippax.)

THERAPEUTIC HINTS.—**Rumex crisp.**, principal remedy. (Searle.) Diluted lye-of-wood ashes locally.

Rhus tox. and **Ledum** may be studied. (Kippax.)

V. ANOMALIES IN THE SECRETIONS OF THE SKIN.

The secretion of *gaseous substances* is either *augmented*, for example, in fevers, when the temperature of the body is considerably raised, and in a hot atmosphere; or it is *diminished*, when the air is damp and its temperature low. In disease, a diminution of gaseous secretion has been ascertained by actual measurement only in diabetes mellitus.

The secretion of *watery substances*, which is called perspiration or sweat, may be promoted in any healthy person by drinking large quantities of water, and covering with a thick blanket, by strong exercise of the body, by the heat of the weather, etc. In disease it is sometimes entirely wanting, at other times, a very

prominent symptom, for example, in pneumonia, in some forms of rheumatismus acutus, etc. Some persons are much more inclined to sweat than others; an excessive inclination to sweat is called **Hyperidrosis.** It seems that repeated sweatings increase the inclination to it. When the fluid which is secreted in the sudorific glands cannot pass freely upon the surface, either because the sudorific ducts are stopped up, or because they are too narrow to give vent to all the fluid which is produced within the glands, we observe the fluid to collect under the epidermis, and to raise it into numerous little vesicles, which contain a perfectly transparent fluid of an acrid reaction. This eruption is called

Sudamina, or Miliary Rash.

The stoppage of the outlets of the sudorific glands occurs most frequently in diseases in which there has been great dryness of the skin previous to the outbreak of the sweat, as, for example, in the first weeks of typhus. The appearance of the eruption has no influence upon the course of the disease; it is observed as well in critical sweats as in those which break out sometimes when the disease takes a bad turn and may even appear during the last struggles of agony. When the transparent, minute vesicles appear upon a naturally-colored skin, it is called *miliaria alba*, when upon a skin which is reddened by hyperæmia or hæmorrhagic effusions, it is called *miliaria rubra.* As a symptom, it may indicate Arsen., Bryon., Calc. carb., or Ipec.

Prickly heat is likewise a miliary rash, consisting of numerous pin-head-sized, reddened papules, or vesico-papules, in consequence of a disordered action of the sweat-glands, covering the trunk, arms, neck and even, at times, the face. It occurs during the hot weather, and is often very annoying on account of its stinging-itching, but usually disappears when cooler weather sets in.

Quite frequently do we find *partial hyperidrosis* on the palms of the hands, on the soles of the feet, under the arm-pits and on the genitals. The sweat of the feet, in the axillæ and on the genitals, is often excessively offensive, which seems to have its cause in a decomposition which the sweat, the sebaceous secretion and the softened and loosened epidermis undergo. The suppression of these partial sweats has been considered from olden times as very detrimental to health, causing spinal affec-

tions and different other complaints. In later times this has been reversed; now they say: intercurring diseases stop this partial sweating. May be, may be not. So much is certain, and I have observed many a time that the cessation of partial sweats stands in closest relation with various general complaints, and that the patient does not get better until the general foot-sweat or axilla-sweat, etc., is re-established.

THERAPEUTIC HINTS.—Compare any Repertory.

Suppressed foot-sweats indicate especially Apis, Cuprum, Nitr. ac., Pulsat., Sepia, Silic.

A *diminution* of fluid secretion, causing great dryness of the skin, often attends marasmus senilis. Sometimes it is a disturbed innervation, and sometimes the consequence of skin diseases. Besides, there are cases of **Anidrosis** and even of *half-sided anidrosis*, for which there is no explanation.

A *qualitative change* in the secretion of sweat takes place in icterus, which colors the linen yellow, and in suppressed urinary secretions, when the sweat contains urinary ingredients.

The secretion of *sebaceous substances*, if diminished, causes great dryness and brittleness of the skin; if augmented (*seborrhœa*), it forms crusts upon the scalp, especially in children, or on the cheeks, nose, eyelids, ears and nipples, especially in females who menstruate irregularly. A thickening of it within the excretory ducts causes *comedones*, *milium* and *atheromata*.

A **Comedo** has a dark surface from the dust and dirt outside, which has been mixed with it.

A **Milium** is a collection of hardened sebum within the extended follicle; being covered by the epidermis it shows no dark, dirty point.

A **Molluscum** is a greatly enlarged sebaceous gland, which is filled by thickened sebum. Being always united with a hair-follicle, with which it has a common outlet, the swelling or tumor generally shows a dark point and umbilical depression on its summit. The color of the skin over it is either normal in color or pinkish. It attacks mostly the face, but it may appear on other parts. Its contents can often be squeezed out.

Internal remedies are: **Silic., Calc. ars.**, Bryon., Kali hydr., Lycop., Natr. mur.

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