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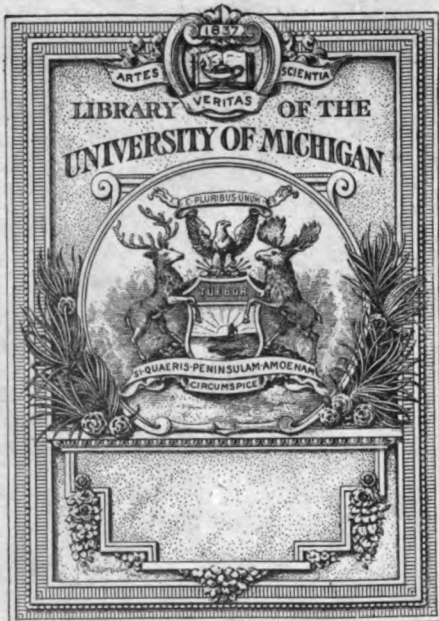
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**Original and Translated Papers.**

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**ARTICLE I.—Tedious Labor.**

BY S. P. BURDICK, M.D.

*(Read before the New York County Homœopathic Medical Society.)*

THERE is no condition of the lying-in state which is more liable to mismanagement than tedious labor.

In the treatment of this subject we shall confine ourselves exclusively to those cases where malformation plays no part in the retarding influences. By malformation, I mean those contractions or distortions of the boundaries of the pelvic canal which can readily be detected, and which clearly indicate the treatment to be pursued.

In order that we may comprehend at a glance what has to be accomplished by nature in cases of normal labor, we will briefly state the conditions.

Inclosed within the uterus is the fully developed fœtus, which must be expelled by means of the contractile power of the unstriped muscular fibres of the body and fundus, in connection with a corresponding relaxation of the fibres of the cervix. The proportions of the pelvic canal and fœtus are well adjusted, so that, in all normal conditions, nature will perform her work unaided, and without any considerable delay. Consequently, all protracted and difficult labor must depend upon abnormal condi-



tions, either of function, structure, or position ; therefore the first problem to be solved, in each and every case, is, to which of the above is the embarrassing influence due? To err on this point, is to involve the case in a series of errors, which will inevitably result in suffering, and not unfrequently in death.

To illustrate: Suppose a case of inertia of the fundus, with strong contractions of the lower fibres of body and cervix, be mistaken for a preternaturally large head, the forceps are applied and delivery effected. What will be the results? Probably one of two conditions, perhaps both: profuse hemorrhage, which will greatly prostrate, if it does not terminate fatally, or inversion of the uterus, from the inert fundus being dragged down by the placenta, from which death may ensue. Or on the other hand, suppose a disparity in head and pelvis is mistaken for insufficient contraction, and the accoucheur is guilty of administering Ergot in large doses (which I trust no homœopathic physician would ever do), we should be very likely to have the mistake rewarded with a dead foetus, unless, perchance, the specimen of *Secale* exhibited proved inert. These two illustrations will suffice to show the importance of a correct diagnosis.

It is an easy matter to determine that there is inertia, when every effort at contraction is but feebly pronounced. But it is a different matter when your patient is writhing under torturing pain, with almost constant appeals to you for help. Yet I assure you that, under these very circumstances, I have seen the worst forms of inertia; and the only case I ever had terminate fatally in my hands was one of this character. I was then young in the profession, and I learned a lesson which has never been forgotten, and which has served me in many cases since.

As this case verifies one of the illustrations just given, I will relate it. Mrs. D—, aged 27 years, had reached the term of her second pregnancy; labor was announced in the afternoon by the usual premonitory symptoms. I was called early in the evening, and, from the regularity and strength of the pains, I hoped for a short labor. Upon an examination I found some dilatation, but observed that, while the contractions were strong, there was not a corresponding forcing of the head downward; dilatation progressed but slowly. After several hours the membranes were ruptured, in

hopes of securing greater expulsive force; violent pains continued during the night, without any proportionate degree of progress; dilatation finally became sufficient to allow the head to pass the os, but with the strongest contractions this was not accomplished; the head had approached the inferior strait, and there remained, but could readily be moved and elevated in the pelvis. The patient had become very much exhausted, from almost constant and severe pain. About daylight I sent for my tried and worthy friend, Dr. Lilienthal, to assist me in the case. After waiting for about an hour, and finding no progress, we thought it advisable to deliver with forceps, which was accomplished with very little difficulty, but the slightest traction being necessary to bring the head into the world. The placenta immediately followed the fœtus, and was delivered without difficulty. There was very little hemorrhage, but the patient seemed very much prostrated, which at first was supposed to result from the long and severe pains; but we soon observed that she was rapidly sinking. The uterus was firmly contracted; there was no loss of blood which could account for the great depression. Every effort was made to rally her; remedies and stimulants were alike unavailing. Thus, for five hours, the lamp of life feebly flickered, and then went out.

Then came the query as to the cause of death, which neither of us could answer satisfactorily to ourselves. I asked for an autopsy, which was granted, and revealed the cause, in an inverted fundus, which by the shock to the nervous system had caused death.

This also revealed the cause of the non-expulsive character of the pains: the fundus being in a state of inertia, under the contraction of the fibres of the body, the fœtus was grasped by the uterus around the centre, and the disposition to escape from this grasp was about as great in the direction of the fundus as in that of the os.

But, as soon as the fœtus was removed by an external force, the placenta being attached to the fundus, dragged it down until it was grasped by the fibres of the body, which separates the placenta from its attachments.

The question which naturally arises in connection with this case is, would death have ensued had the inversion been discovered and the fundus released? Perhaps not, still the dangers would

have been imminent, and for this reason : if the fundus had been released, then all the sinuses where the placenta had been detached would have been left open, and a fatal occult hemorrhage would probably have been the result, for there would have been no contractile power in the inert tissues to have closed the bleeding vessels. This view of the case is sustained by the fact, that if there had been sufficient reactive force left in the fundus, it would have been aroused by the grasp that was made upon it, and contraction would have taken place ; by which means the inverted portion would have been withdrawn.

If we accept this, the next question to be answered is, how then could this woman's life have been saved ? I answer, by having correctly diagnosed the case when it was discovered that the violent pains were not accompanied by a corresponding advance in the direction of delivery, and treating her in accordance with such diagnosis. This brings us to the diagnosis of inertia of fundus uteri. The first obvious symptom which should cause suspicion of the existence of this form of inertia, will be observed in making a digital examination during a strong pain. It will be observed during the contraction, that the presenting portion of the fœtus is not caused to descend in proportion to the contraction. The next point to settle is, whether this disparity is due to osseous obstruction from a contracted pelvis, or any disparity between head and pelvic canal. This can be ascertained in the majority of cases very readily : if due to either of these causes, during the pain the head or presenting part will be pretty firmly fixed in the pelvis. On the contrary, if due to inertia of the fundus, there will not be such a firm and immovable condition of the presenting portion. In some cases I have been able during strong contractions easily to move the head around in the pelvic cavity, and in some cases it has been readily elevated.

Now if these last-named conditions exist, the next step to be taken is to place one hand firmly upon the abdomen over the fundus, and observe during a pain the character of the contractions ; if they are found to be feeble in that locality, other portions of the abdominal tumor may be consulted in like manner. But it must be remembered, that previous to the evacuation of the liquor amnii, that the contractions of the uterus are not brought

to bear directly upon the fœtus ; this is especially the case where the fœtus is small, and there is a large quantity of water. And in making up the diagnosis, this must be taken into account. If the membranes have been ruptured, the contractions strong, with slight pressure downward, and a feeble impulse imparted over the fundus during pain, and the head not firmly fixed in the pelvis during the contractions, you may safely pronounce the case to be inertia of the fundus. And under such circumstances, it is unsafe to terminate the labor with forceps until you have secured a reasonable degree of tonicity of the fundus. When this has been accomplished, in a large majority of cases it would not be advisable in our opinion to tax for any considerable length of time the strength thus secured for fear of its being exhausted ; this having occurred it would with difficulty again be restored. But the labor should be terminated artificially.

Inertia of the fundus is many times a difficult condition to overcome. Sometimes it yields promptly to Pulsatilla ; in other cases this remedy is unavailing, and Caulophyllum acts kindly. Sometimes Secale in *small* doses does the work. In large doses it is *always unsafe*, as we shall show hereafter. But the remedy which has, as a rule, afforded the most prompt relief in my hands is brandy. I have two methods of administering it. Where the inertia has apparently existed from the commencement of labor, I usually put a teaspoonful of brandy in half a goblet of water, and give it in spoonful doses every half hour, hour, or two hours, as the case seems to demand. Where the inertia has arisen in consequence of exhaustion from prolonged exertion, then I give it in teaspoonful or tablespoonful doses mixed with a little water.

I usually resort first to the remedies that seem indicated ; if they fail to give the desired results, I then have recourse to the brandy, which rarely disappoints me.

The dangers, as a rule, are much greater to the mother than to the fœtus in this form of inertia, as will readily be seen in the fact, that the life of the fœtus is usually destroyed in protracted labor by the strong contractions of the uterus upon the placenta, by which means the supply of oxygen is interrupted.

As a rule the placenta is attached to the fundus, consequently in this form of inertia, the placenta suffers very little from pres-



sure; the exception being in those cases where the attachment is to the lower segment or zone of the uterus, under which circumstances the life of the foetus may be sacrificed for the want of artificial aid.

What has been stated with reference to the diagnosis of inertia, renders it unnecessary to enter into the details of a diagnosis of structural retardation of labor. The principal point to be determined in these cases is, whether the delay is due to want of capacity, or unfavorable position. This must be settled by the physician in charge. It remains for us in this connection to indicate the danger and the remedy.

First, the membranes should be allowed to remain intact, until the os is well dilated; when this is accomplished the water should be evacuated, in order that the expulsive force be brought directly upon the foetus.

From this time the dangers to the foetus commence, for with each contraction of the uterus the placenta is compressed between the walls of the uterus and the foetus, and were it not for the intermitting character of these contractions, there would be very few children born alive. It is an easy matter to determine the effect of these contractions, by placing the stethoscope over the region of the foetal heart at the commencement of labor, when it will be ascertained that the pulsations are about 150 per minute, but if these observations are renewed after the rupture of the membranes, and during a strong and long-continued contraction, it will be found that the pulsations have greatly diminished in frequency, and this diminution will be in proportion to the strength and continuance of the contraction of the uterus.

But so long as the pulsations continue to return to about their normal frequency during the interim of pain, there is little to fear for the life of the foetus; but if it be ascertained that there is a gradual retardation in the foetal heart-sounds, *then there is no time to be lost; delivery should be effected at once*, otherwise the most fatal results will ensue.

And here let us observe how death occurs in these cases.

The foetus is supplied with oxygen through the medium of the placenta from the circulation of the mother; the foetal circulation is decarbonized through the same medium.

So long as this interchange goes on, there is no demand for respiratory action on the part of the fœtus, but in proportion as it is interrupted, the demand for respiration is set up. And when such interruption has reached a degree that shall cause the pulsation of the fœtal heart to remain for any considerable time below 100 per minute, the respiratory movement will be established; and if the fœtus still remain in utero, whatever substance is in close proximity to the respiratory openings, is transmitted at once into the air-passages, and the lungs are filled with liquor amnii, mucus, meconium, or any other substance capable of being taken in by the inspiratory action.

This does not necessarily produce immediate death of the fœtus, but it very seriously complicates the case, even if delivery is effected before the pulsations of the heart are entirely suspended.

It must be obvious that the efforts to induce respiration after delivery will be greatly embarrassed by these conditions, and, in many cases, rendered futile; but if rewarded with success, the danger is by no means averted. Foreign substances, such as meconium, clots of blood, etc., may remain in some of the air-passages, so completely occluding them, that portions of the lung are never inflated, which sooner or later results in lobular pneumonia and death. This statement has been repeatedly verified, by numerous post-mortem examinations, as well as the fact that in almost all cases where death of the fœtus is due to protracted labor, the lungs are found loaded with these and other foreign substances. But if the respiratory movement continues to repeat in utero, death must ensue.

Not long since my attention was called to a still-born child, where no artificial means had been employed. From some cause, probably premature separation of the placenta, the respiratory movement had been set up before delivery was effected; and in this case the labor had not been unusually severe or protracted, but for hours after delivery there was a constant oozing of blood and mucus from mouth and nostrils of the dead child. This blood and mucus had undoubtedly been drawn into the air-passages during premature inspiratory action. This is not the only serious trouble arising from a premature inspiratory movement.

It is obvious that all the minute bronchia and air-vesicles of

the lung cannot be filled by the thick mucus and other foreign substances which are drawn into the larger air-passages; consequently with the inspiratory movement there will be a large quantity of blood drawn from the right ventricle into the lungs, and hyperæmia is always the result, with extensive effusion in the majority of cases.

From the exhibition of these facts it must be obvious to all that ergot should never be administered in large doses, or even in *large small doses*, in retarded labor, for the effect of *Secale* is to induce *strong and continued contraction* of the uterus, which *must inevitably* result in premature respiratory action, unless the foetus is promptly expelled with the first effects of the drug; and it is for this reason that under its use there have been so many still-births, and so many children die soon after birth.

There are other causes of tedious labor, which we have not the time to mention in this connection. Had we the time, they would not materially aid in enforcing upon you the great object we have in view, namely, that of fixing indelibly in the minds of each and every one, that *there is danger to life and health in prolonged labor*; that every physician has within his reach the means of knowing when *that danger is present*; that he has at his command the means by which he, in the large majority of cases, *can ward off that danger*, and secure life and comfort to those in jeopardy. And he who fails to avail himself of these means, and by such failure allows an innocent life to be sacrificed, or misery and suffering to be entailed, is of all men the most guilty.

We have spoken of the chief dangers to the foetus, and of some of those to which the mother is exposed, and it seems almost needless to refer to the prostrating influence of a protracted labor, and the extreme suffering which the mother must endure.

But the *cause of humanity demands* that we enter our protest against the too common inhuman practice of *allowing hours and even days of the most excruciating torture*, which might at any moment be relieved by the kindly services of the forceps, which, in the hands of a skilful operator, are a blessing to the parturient woman. I do not wish to be understood to advocate an indiscriminate use of forceps in all labor that may be slow: this would be equally culpable; but I do wish to say that every man or

woman who engages to take care of parturient women, should be so thoroughly qualified, and so evenly balanced, that instruments shall always be used at the right time.

We are frequently confronted with the argument, that parturition is a physiological condition, and as such should be left to nature to terminate. To this we answer, that where the physiological is unincumbered with the pathological, we agree with the above, for then the presence of the physician is almost needless.

But almost every unusual delay in labor is simply an expression of pathological embarrassment, either in function or structure, and should be treated accordingly.

Hundreds of obstetricians can testify to the baneful effects of protracted labor upon the mother.

Under its influence, they have seen innumerable times the vital force wane and sink irreparably, inviting disease, which carries away its unfortunate victim. They have seen the tissues devitalized by continued pressure, from which gangrene results, followed by vaginal fistulas, which cause the sufferer to loath her very existence. In others, septicæmia, with prolonged illness, and perhaps a life of unmitigated suffering, is the result.

Mr. President, if, from holding up before you to-night this array of fearful facts, I may be the means of saving some innocent life, or sparing some fellow-being hours of pain and suffering, I shall have been well rewarded for my labor.

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## ARTICLE II.—Diphtheria.

BY J. BUCHNER, M D., MUNICH, BAVARIA.

THE frequency of diphtheritic sore throat necessitates a differential diagnosis of the chief remedies, for it is our utmost duty to render quickly efficient aid, as amelioration or death must follow on account of the necrotic detrition.

*Kidd* recommends in connection with a stimulating diet the selection of the remedy p. r. n. *Apis* is recommended by Baehr, Baumann, Fischer, Kallenbach; *Acidum carbolicum*, by Bayer; *Acidum muriaticum*, by Kidd and Morgan; *Acidum nitri*, by Kidd,

Dake, Davies, Trinks, Neidhard; *Ammonium causticum*, by Kidd and Smith; *Arsenicum*, by Grauvogl and Schneider, according to Kafka, also *Chininum arsenicosum*; *Belladonna*, by some on account of its local similarity; *Bromum*, by Hirsch and Black; *Bryonia*, by Currie and Cretin; *Cantharides*, by Neidhard; *Cap-sicum*, by Dake; *Carbo*, by Kellogg and Pratt; *Camphor*, *Mos-chus*, and *Wine*, by Trinks; *Croton tiglium*, by Williamson; *Fer-rum muriaticum*, by Madden; *Hepar*, by Cretin; *Iodine*, by Dake, Kidd, Goldmann; *Kali bichromicum*, by Madden, Lord, Lippe; *Kali hypermanganicum*, by Marsten, Nichols; *Gelsemium*, *Lachesis*, by Lippe; *Mercur. cyanuretus*, by Berk; *Mercur. jodatus*, by Black, Colton, Morgan, Dake, Ludlam, Paine; *Plumbum jodatum*, by Hirsch; *Phytolacca decandra*, by Bayer, Burt. (*Lac caninum*, by Swan, Pierson.)

*Aconite* and *Belladonna*, so frequently indicated in many diseased states, are not suitable in diphtheria, although the patient may be racked by most severe fever, as it is not fibrinous, running a very rapid course, especially in unfavorable cases, and becoming quickly adynamic. The *mercurials* are nearly all deficient in the rapid prostration as found in severe diphtheritic cases, and lighter cases we just now do not consider. It is rather remarkable that no homoeopathic authority mentions the nitrate of silver, so much in vogue in other schools. We speak of chief remedies, and those which may follow the former ones, as we never alternate remedies, but give each remedy according to its characteristic indications. Celsus already teaches: *ut administretur semper una et unica medicina in omni morbo*.

We consider characteristic remedies according to the stage of the disease: *Apis* at the start, just as we rely on *Bell.* in croupous inflammation; the acids, Citric acid better than Lactic acid (*Virchow LII*), especially Nitric acid, *Arnica*, *Kreasote*, *Secale*, *Lachesis*, *Crotalus*, sometimes *Arsenic* and *Carbo*, very rarely *Camphor* or *Moschus*.

Among the 1320 symptoms of *Apis*, 26 are related to the throat; sensation of rawness, burning, difficulty of swallowing, redness, swelling of the tonsils, contraction, sensation of suffocation. Characteristic for our purpose is the symptom: a few hours after the sting of the bee the throat swelled, at first inside, then externally,

the voice became hoarse, respiration and deglutition very difficult, not on account of the swelling of the throat, but from the irritability of the epiglottis, as every drop of fluid, brought on the tongue, threatens to suffocate him. A *small white spot*, half an inch from the glottis towards the left, and death after twenty-seven hours.

When epidemics rage in the country, physicians cannot attend all the cases personally, and it may be justifiable to give some advice, at least for the very beginning of the disease, for even country louts are not favorably inclined to have their own throat and those of their children burnt out by caustics, and leave such harsh treatment for the city folks. At an epidemic in Franconia the people took Apis internally, gargled themselves with Alcohol, and the rate of mortality was very low. It is of no use to recommend many remedies, as it only produces confusion, and laymen are very apt to change too often.

We find as characteristics of the *acids*: infiltrations, tendency to deleterious detrition of the exudations, tendency to colliquation, or to decomposition of the blood, and thus to collapse as after preceding febrile or inflammatory manifestations; a detrition of the organic substances; inflammatory remnants, as also in Arsenic; whereas in the Carbo's every turgescence of the blood is absent, every symptom of reaction gone. All polychrests have the peculiarity, that their essential character mirrors itself again in the foci of localization. The symptoms which Acidum nitric produces in the throat show all over just like the symptoms of the rectal mucous membrane, a severe morbid state, a substantial change, redness, burning, stitching, swelling, and ulcerative pain on the tonsils, on the posterior muscles of the fauces, on the pharynx, so that the food is pushed towards the choanæ and the nose. In angina maligna after Apis, as soon as our diagnosis rests on a secure basis, and infiltration is clearly made out, we rely immediately on Nitric acid, just as we would think on Bell. and Mer. in catarrhal, or on Bell. and Hepar in croupous inflammation. The seventy symptoms of Acidum nitr., relating to diphtheria, predominate greatly over the sphere of action on the throat of any other acid. As soon as diphtheria becomes epidemic, Nitric acid is just as much the remedy for the local affection, as Acidum phosph. in

diphtheritic croup, or by continuation of the disease from the throat to the larynx. Even in malignant epidemics of measles, and far less so of scarlatina, we could not do without the acids, but we must individualize between Nitric, Sulphuric, or Phosphoric acid.

We still hold fast to Nitric acid, though necrosis with reactionary inflammation has set in, especially when the latter is of a migratory character. Muriatic acid suits more those cases running their course without considerable fever, with great malaise and lassitude, and which give us the picture of a lentescent fever. Muriatic acid also shows more affinity to the changed quality of the blood in scarlatina than Nitric acid, just as Phosphoric acid shows more affinity to the affections of the bronchial mucous membrane. (Kammerer.) In fact all acids, from nitric to arsenious acids, act specifically and diphtheritically on the mucous membranes, especially Nitric acid on the throat, Phosphoric acid on the bronchi. Sulphuric acid finds its indications in scurvy, after trauma, and in menstruation during the course of acute exanthemata. Many allopathic physicians successfully use insufflation of flowers of sulphur, whereby Sulphurous acid is developed. The same may be said of the frequent applications of nitrate of silver, which also shows its specific action by the development of Nitrous acid. In comparing physiologically, not chemically, *Acidum nitricum* and *Argentum nitricum*, we arrive at the result, that *Argentum* produces no croupous, but a sero-albuminous, not coagulable exudation, as we find it, *e. g.*, in meningitis cerebrospinalis, in the soft membranes covering the brain and spinal cord; that it acts indirectly through the cord on the organs of deglutition; that it may be considered, therefore, only as a reactionary means, just as we explain its caustic action on torpid chancre. *Argentum nitricum* never is a true diphtheritic remedy, and its beneficial action can only be explained by the liberated Nitric acid. From a physiological standpoint we can allow no other action to nitrate of silver than we do to *Kali nitricum*, namely, a catarrhal action with its erosions. It is true, *Argentum* attacks the head and spinal cord, and we find erethism, with lassitude of the extremities, dryness of the mouth, burning and ulcerating pains; at first, dark redness, thick mucus in the throat, but no cheesy color of

the exudation; hacking in the throat, great torpidity, deficient reaction, etc.; but the 57 throat symptoms, laid down by the Vienna provers, show neither acute (phlegmonous, sthenic) inflammation, nor any symptom of diphtheria; we deal here with a chronic (adynamic, asthenic) form, as we find it as a periodical upshot in cachectic, chronically sick individuals, as a secondary expression of a specific disease, which plants its root superficially in the mucosa, and produces therein structural alterations, granulations, and helcosis; secondary forms of purely albuminous nature. A merely mechanical destruction of an exudation is scientifically obsolete. Cerebral and spinal manifestations must prevail whenever we expect any benefit from *Argentum*.

We are only acquainted with one observation of *cyanuret of mercury*, where a man swallowed two grains. The symptoms were: Tongue heavily coated, vesicles on the left margin of the tongue and on the left side of the soft palate; difficult deglutition. The vesicles burst the next day, forming a flat irregular ulcer on both places.

Increased secretion of saliva. We would consider characteristic indications for this remedy: Diphtheria externally very little visible, but copious serous infiltrations, bluish tint of the mucous membrane, chronic catarrh in the retropharyngeal region. We have met two cases, where we could not exactly diagnosticate the adjectivum of the angina, inasmuch as with a livid infiltration of the soft parts of the throat the cheesy deposit and the aphthæ were absent. In the first case our doubts were soon removed, as the woman had caught the diphtheria from her husband. Virchow mentions a case of conjunctivitis diphtherica, which was cured by *cyanuret of mercury*. Even where the deleterious detrition of the exudation, *i. e.*, black softening or mortification, cannot be prevented any more, on account of the bad constitution of the patient, or from unhealthy habitation, insufficient treatment, or too late inspection, from mercurialization or depletion, we may still cling with some hope to *Arnica*, *Secale*, or *Kreasote*. The vaunted *Cinchona* is a hydræmic remedy; in fact, it does not act on bloodvessels, and can, therefore, neither produce nor cure mortification.

*Tincture of 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 ichor-rhæmia, 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 posteriorly, as if some hard substance were in the pharynx; noisy and difficult deglutition, prevented by a kind of vomituration, as if the food could not pass downwards.

*Secale* destroys all peripheric circulation by paralysis of the nerves and capillary stasis; the parts die from dry gangrene. Symptoms observed on the healthy are: Loss of strength, rapid loss of sensibility, and numbness of the extremities, followed by gangrene; paralysis of some parts; painful tingling (crawling of ants) on the tongue; dry gangrene, so that the dead parts fall off without pain; apathy; dilated pupils; burning pains of the affected parts; stammering speech. We thus see the stage at which the smut rye finds its characteristic indication. *Secale* has more similarity with *Carbo* than with *Arsen.*, inasmuch as all reactionary symptoms are absent, which only appear when the gangrene is stopped in its advance. *Secale* and *Kreasote* may be taken as the pictures of gangrene and softening.

*Kreasote* is more frequently indicated than *Secale*, especially in children, where diseases of the mucous membranes are so frequent. It gives us not only the symptoms of detrition, but also of softening, especially of the mucous membranes, and acts well after nitric acid in scrofulous and lymphatic patients, with black softening of the mucous membranes, with decomposition of the same from diphtheria and gangrene, atony, extension of the softening, especially towards the œsophagus.

*Lachesis* (and *Crotalus*) are useful in diseases of children and climacteric women, especially in affections of the left side, as it is

a cardiac remedy ; sensation of suffocation ; difficulty of swallowing fluids in coarse phlegmonous forms ; suppuration and foul breath ; extension of the affection into the ears ; aggravation by the touch and after sleeping ; difficulty of swallowing fluids, but none in swallowing saliva or food ; the pains extend from the ears into the throat, and *vice versa* ; dryness from the glottis to both ears : he feels this dryness during deglutition ; or dryness only on the left side upwards into the nose, and downwards into the chest.

The preparations of *Arsenicum*, *Acidum arsenicosum*, *Chininum arsenicosum*, *Calcareum arsenicosum*, find only their indications in the presence of severe morbus Brightii, in typhoid fevers, especially when epidemics rage, with tendencies to degeneration in the throat and kidneys.

*Carbo* gives us the picture of organic detrition without reaction, whereas *Arsen.* still shows inflammatory remnants.

Where, in weak persons with extensive exudations, paralysis threatens to set in, Trinks recommends *Camphor* or *Moschus*. As soon as the gangrenous part is cast off we treat the suppurative inflammation, according to its adjectivum, with *Hepar*, with the different preparations of *Calcareum* ; *phosphorica* in tuberculous persons ; *acetica* in herpetic patients ; *oxalica* in melanotic ones ; *carbonica* in anæmic ones ; or with *Silicea*, *Mezereum*, *Baryta*.

We must never forget that the reactive inflammation may take on a superficial diphtheritic character, in which case we only continue with nitric acid.

The induration of the tonsils and of the glands of the neck, remaining after severe cases, usually yields to the same remedies. Ulceration of the nasal canal and of the Schneiderian membrane has been cured by *Ammonium causticum* (Dake). As an external application oily substances are preferable to water.

In paralysis of the extremities or of the muscles of the neck and of the pharynx, we recommend the study of *Cuprum*, *Cocculus*, *Nux*, *Arnica*, *Baryta*, *Plumbum*, *Rhus*, *Stannum*, *Sulphur*, *Zinc*, *Gelsemium*. In paralysis of the lungs, *Tart. emet.*, *Camphor*. In dropsical affections, *Bryonia*, *Cinchona*, *Arsen.* Cicatrization of the ulcers often causes disturbances in swallowing, masticating, talking.

Where diphtheritis is amenable to local applications many

physicians honestly think they could not do without them, and the remedies recommended are legion, but the most simple and most reliable is still plain alcohol, which may be diluted with water for tender and young persons. Children cannot gargle, but the diphtheritic spots may be touched by a camel's-hair pencil dipped in alcohol. We prefer to use the same remedy locally which we prescribe internally whenever local applications are necessary or advisable.

*Statistics.*—Diphtheritis for itself, or in combination with other diseases, may attack every part of the cutis of the organism, especially the external skin, the mucous membrane, and the subcutaneous cellular tissue. Of two hundred and twenty-nine cases diphtheritis was observed twice on the gums; twice on the tongue and hard palate; twice on the tongue in typhus; once on the tongue and soft palate; once on the tongue and the throat; where especially the tonsils were found affected on both sides one hundred and sixty-four times; seven times, first the left, and then the right tonsil, or *vice versa*; once the tonsils and the gums; three times the tonsils and the soft palate; once the left side of the throat became immediately gangrenous, then the uvula; on the third day the disease attacked the other side and the epiglottis; once the fauces, the glottis, and the uvula; twice the choanæ; once the choanæ during scarlatina; three times the choanæ and the throat; once the left tonsil after measles; twice croupous tonsillitis after diphtheria; four times the velum palati and the uvula; once the right tonsil and the right retropharyngeal region; once the throat in variola; twelve times the throat in scarlatina; once in typhus; five times the throat and larynx; once the larynx; once the skin from the left side of the throat; once the skin above the right clavicle in scarlatina; once the whole left shoulder and spreading; once the skin of the left leg; once the scrotum; once the perinæum and scrotum; once the mucous membrane of the trachea on left side after typhus; once the gastric and intestinal mucous membrane after the removal of psoriasis; once the cæcum; once the colon; once the rectum after typhus; once the rectum after cholera; morbus Brightii was ten times observed.

The question may be raised whether diphtheritis may attack the same person several times. We observed it twice in succession

in four cases ; in still more cases at an interval of a year, in others after a longer time. It may also become migratory, at first as gangrenous destruction, *e. g.*, the first day on the left tonsil, followed the second day as gangrene on the uvula, reaching the right tonsil on the third day as simple diphtheritis, and spreading on the fourth day to the glottis; or it may attack the throat on the first day, then the larynx, and may finish off as paralysis after diphtheria, which, according to Buhl, arises from hemorrhages in the nervous sheaths, and which is more frequently observed after rough treatment, as neither ourselves saw it frequently, nor does Neidhard mention it in his monography. Mouton had nine cases of paralysis among three hundred patients. According to Weber there were sixteen deaths from paralysis in one hundred and ninety fatal cases. Bouillon and Lagrange note among seventy-three patients twenty-three fatal cases in the first stage of the disease, and observed four cases of paralysis in the remaining fifty, or 8 per cent. Roger gives us thirty-six paralyzes in two hundred and ten cases of diphtheria, treated in the Hôpital des Enfants, or over 16 per cent., and it would make 30 per cent. by adding all the cases fatal during the first days of the disease.

Dr. Davidson (*A. H. Z.*, No. 26, 1874) failed in far-advanced cases to give any relief with Apis, Arsen., Brom., or Merc. cyanur., but found *Acid carbolica* of eminent service, according to the indications given in Hale's *New Remedies*, third edition. In mild cases of diphtheritis Davidson gives twelve drops of the third centesimal dilution in one hundred and twenty grammes water every two hours, a teaspoonful to children, a tablespoonful to grown persons, and uses at the same time a gargle or pencilling with a weak solution (eight or ten drops of the mother tincture in a glass of water). In malignant infecting cases, making themselves known by the foul odor, the decimal dilution is used instead of the centesimal one, given at shorter intervals; the spray or inhalations (double strength of the gargle) ought to be used every five minutes. Icy-cold compresses, frequently changed, are put around the neck and covered with flannel. Where the nostrils are affected, injections with the same solution are advisable. The strength must be kept up by cold strong beef tea, milk, and soft-

boiled eggs, in small but frequent doses. He found Carbolic acid equally efficacious in angina scarlatinosa. (We can add our testimony to the efficacy of Carbolic acid in the diphtheritic process, but instead of the gargle we use the common atomizer, found on any lady's toilet, and even infants do not object to such mild application. Compare also Hoynes's *Proving of Carbolic Acid*, symptoms 1, 4, 88, 95, 96, 97, 106 to 120, 170 to 175, 231, 272, 274.)

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### ARTICLE III.—Osteo-myelitis of the Head of the Femur.

BY DR. MAYLAENDER, OF BERLIN.

A DAUGHTER of a merchant in Berlin, 7 years old, was attacked in the beginning of last year with diphtheria faucium, which ran a favorable course, but left her for a few weeks pale and debilitated. Without any apparent cause, she began to complain, in the last part of March, 1873, of pains in her left gluteal region. Severe fever set in, with increasing high temperature during motion of the left leg, and a somewhat hard swelling showed itself in the left iliac region, near the fossa iliaca. The child steadily lost flesh, lost her appetite, and I was called in towards the end of the month. With the symptoms already enumerated, I found an aggravation of the pain on pressure on the internal wall of the left ilium, where the hard swelling extended from the left iliac region to the crista beyond the spina anterior superior, also considerable pain during motion of the left leg in the hip-joint, some bulging out in the region of the left trochanter, and an indistinct deep fluctuation. Also a fluctuating tumor in the middle of the right foot, especially over the fourth and fifth metatarsal bones. The vertebral column was in no way sensitive to pressure. Our little patient coughed, and complained of pains in the left chest. On the dorsal surface of the left side of the thorax, dulness and bronchial râles were found. I diagnosed an acute osteo-myelitis of the ilium, with a specific addition of a morbid state of the left hip-joint, multiple osteo-myelitis of the metatarsal bones, and probably embolic hepa-

tization of the lungs. In the immediate neighborhood of the hip-joint I suspected deep lying periarticular suppuration. After an incision in two fluctuating places, we found osteo-myelitic softening of the fourth and fifth metatarsal bones. Convinced of the presence of a dyscrasia (probably the preceding diphtheria), the indication was to prevent further infection by evacuation of all depots where pus accumulated. With a fine trochar we established the presence of the periarticular abscess, and after making a broad incision a large quantity of cheesy pus was discharged. The introduced finger discovered a rough place on the left upper rim of the ilium, close to the spina anterior superior. A drainage-tube was inserted, and she took internally Aconite and Apis, and then on account of the pulmonary affection Acidum phosphor. After awhile a cold abscess formed over the left deltoideus, which, after being opened, discharged large quantities of cheesy pus, and then healed up per primam intentionem without further suppuration. May 9th, we opened and drained several places on the hip, wherever pus could be detected; the state of the lungs became by this time more satisfactory. The affected leg was one inch shorter, and during chloroform narcosis decided crepitation could be made out in the hip-joint. Bandaging with adhesive plaster was now applied in order to draw the leg down, five pounds weight being used at the beginning (May 29th). On account of the steady high temperature, Apis was continued, and she was allowed to drink cider mixed with water.

I pass by the further futile internal treatment with Silicea, Phosph., Calcarea phosph., etc. The temperature always remained high, with some slight difference in the morning. Her whole state did not change for the better, although we tried our utmost to keep up her strength. We allowed her to drink wine ad libitum. The suppuration continued. When screaming, pus came out in a fine jet from a fistulous opening over the great trochanter. It was difficult to prove where the pus came from, and how it passed the ilium. Was this bone perforated, or does it pass through the acetabulum and the perforated sheath?

We therefore removed the little patient to our infirmary, where we performed resection according to my method, which we will describe by and by. She did not lose a tablespoonful of blood.

The edge of the acetabulum was osteo-myelitic carious, the head of the femur so soft that it could be compressed with the finger, and decidedly carified, the ligamentum teres destroyed. A communication with the abscess from the base of the cotyloid cavity could not be proved. Drainage was diligently cared for, and cider with water allowed. The result was eminently successful. July 14th, the morning temperature was 37.4; July 15th, 37; evening, 37.6-38.2. From July 25th to 28th the temperature increased in the evening to 40.2, mornings, 38.2, inasmuch as the subfascial abscess in the iliac region became ripe. After its opening, the probe revealed a sequestrum in the region of the posterior corner of the linea arcuata sinistra, and its removal was found necessary.

October 23d, the little patient was dismissed from the infirmary, but remained under treatment for some time yet, as it was several times necessary to enlarge fistulous openings and to remove carious particles. The leg was hardly one inch shorter, and during the following summer she was able to walk a mile with the aid of a light cane.

Our second patient is a boy of 12 years, who also passed through a severe attack of diphtheria, and whose convalescence was very slow. February 1st, 1873, he went skating, and grazed the right external malleolus. Carelessly he walked two miles still to his school, although the foot was already painful. Even here he did not mention it, went again skating, but on the evening of the 12th he was taken with a chill, high temperature and great painfulness of the joint. Six days passed before they sent for a physician, who considered the whole case a pseudo-erysipelas. He ordered cold sugar of lead poultices, and failed to perceive the pain and swelling in the right forearm and in the left leg. The pains increased so much during the night from the 19th to 20th February, that the boy, who otherwise showed great power of endurance, jumped like crazy from his bed, and hobbled about the room on one leg. This febrile state was accompanied by sleeplessness and loss of appetite. The swelling encroached more and more on the leg, and extended anteriorly to the toes; the whole leg had a livid color, and another physician finally attempted to make an incision, through which a whole cupful of pus was dis-

charged. The incision was repeated the following day at another place, but the pain did not abate. In the short space of three weeks he became greatly emaciated, when I was sent for, and found the foot in the strongest plantar flexion, and the joint, as well as all the tarsal bones, totally degenerated, softened, and destroyed. With a sharp-pointed needle, the foot could be punctured in every direction without finding great resistance; even the lower part of the tibia and fibula and the metatarsal bones down to the second phalanges of the toes were osteo-myelitically diseased. Spontaneous division of the upper epiphysis began to show itself on the left tibia. To save life and to release the poor sufferer from his terrible pain and the danger of further infection, the leg was amputated subperiosteally. The hemorrhage was moderate, and the patient felt tolerably well during the first few days after the operation; but about a week afterwards a peculiar state set in, so that the little patient looked like a corpse, unconscious and pulseless, for about two hours and a half. We suppose that an embolic process passed the heart. After a few days he complained of his right hip; the temperature rose mornings to 39.5, in the evening, 40.5; a painful tumor in the right inguinal region spread rapidly over the whole right thigh down to the knee, and felt as hard as a board. This was diagnosed as an acute osteo-myelitis of the neck of the femur with panarthritic manifestations, and his only salvation depended on Acid phosph. and the free use of wine. He drank daily two bottles of Rhine wine (hock) and half a bottle of champagne, with not the least touch of intoxication, so that he consumed in a few weeks fifty to sixty bottles, and this, I candidly believe, saved his life. The temperature fell again (morning, 37.5, evening, 39.5) after emptying by a puncture with a trochar five saucerfuls of pus, and large quantities of pus were daily discharged through the drainage-tube. Our next consideration was to transport the boy to Berlin, in order to operate on the necrosis and to correct the ankylosis of the hip with outward position of the thigh of about forty-five degrees. The pelvis gradually turned out of its axis with comparative lordosis of the lumbar vertebræ. The division of the epiphyses on the left leg had also taken place during that time, but became more attached again during the last weeks. February 28th,



I performed the operation on the necrosed parts, and removed twenty larger and smaller sequestra from the leg. The cure went on nicely, but the fistula and the swelling on the right hip continued. Most probably there was necrosis of the caput femoris.

Now I would like you to lend me your attention again, that amputation was first performed, then a most severe panarthritic inflammation of the hip-joint set in, the division of the epiphysis at the end of the left tibia, true ankylosis of the femur with the pelvis, and lordosis of the spinal column. September 19th, I removed the caput of the right femur with an anterior incision of  $1\frac{1}{2}$  inches length; we found the epiphysis totally loosened on the neck, and piece by piece the head of the femur was removed. Hardly any reaction set in after the operation, and the healing process went on rapidly. Three weeks after the operation the patient could ride out, and October 23d he left for home; by the beginning of this year (1874) he had recuperated enough, and I performed therefore the brisement forc e on the ankylosis of the hip, in order to give the right foot the normal position, and to remove the lordosis. The operation was difficult; it gave a fearful crack, but the healing process was again excellent, the leg became straight, and finally our patient looks now hale and hearty, walks nicely with his artificial leg, and hardly shows any traces of the fearful ordeal he passed through. I do not know another case, where a child with such septicamic processes, and on whom in a short time four capital operations were performed, recovered so nicely; it only teaches us again, never to lose courage even in the worst cases.

Allow me to report another case, which was treated by Dr. Zwingenberg till an operation was indicated. Towards Christmas of last year I was called to a lady who probably became affected with a coxitis. For nine months she was treated by different physicians. Her pains even in bed were so great that she could not bear the least touch, and she had to be chloroformed in order to get the diagnosis. There was strong crepitation in the hip-joint, with moderate swelling in that region. My diagnosis was caries sicca. In a wire-basket and an ambulance the patient was brought to our hospital. The pains diminished from the first day after the application of suitable bandages, and under the use of Aconite and *Nux vomica*. After a few months, the crepitation in the

hip-joint was gone ; she tried to get up and walk, but a few steps tired her out, and the pains returned in the hip-joint. About three months ago a cold fluctuating tumor appeared on the anterior internal side of the hip-joint, but fluctuation could also be observed on counter-pressure at the posterior side of the joint. With the trocar a cupful of turbid, synovia-like fluid was discharged, and softening of the caput femoris proved. With the canula we could penetrate the caput femoris, and on withdrawing it some thick cheesy pus was found in the opening. Several internal remedies were tried: Silicea, Phosphor., Asafetida, Calcarea hypophosphorica, but without any result on the local disease, although they aided the process of nutrition ; resection was therefore successfully performed, and so far not a trace of pain any more in the resected hip.

All these cases show how difficult in the beginning the diagnosis of osteo-myelitis in the hip-joint may be, but there are a few hints which may lead us even then to the right diagnosis: The patient usually designates a deepseated point as the painful place, and all motions are very painful. The patient tries instinctively to fix the hip-joint, and yields with the whole pelvis in passive trials to move the thigh. The patient fixes the pelvis, to prevent as much as possible the painful motions in the joint. It may happen that we do not know which joint is affected, but the greater the pain during motion of the thigh of the affected side the more anxious is the patient to fix the pelvis. We must also recollect that osteo-myelitis sets in with extraordinary high temperatures, and that these are apt to be constant. The differences between morning and evening temperatures are insignificant, only one-half to one degree, which shows that a part of the inflammatory exudations in the hip-joint, standing under an unusually high pressure, are quickly and steadily absorbed.

This high pressure must be reduced, the action of the inflammatory ferments on the circulation rendered innocuous, and the severe pains moderated. I discard now perfect quietude of the hip-joint, and with it the plaster-of-paris bandage in any form of coxitis, and prefer the bandage for permanent distraction. Ice must be used to relieve the pains and to reduce the high temperature. Internally, I recommend the use of *Apis* low with the Aco-

nite. I do not know a better remedy to render innocuous the action of inflammatory ferments in acute inflammatory processes running their course with high temperatures, and I consider the sudden appearance of a constant high temperature as a specific indication for Apis. I also earnestly recommend full quantities of Alcohol. *The higher the temperature, the more liberal the use of wine, champagne, cognac in water, etc.* It is astonishing what large quantities such patients bear without a sign of narcosis. In my second case the patient took daily two bottles of good hock and half a bottle of champagne without a trace of intoxication; I also use the pure *Phosphoric acid*, two to five drops every two to four hours, for dry tongue, great irritability, constant moaning and complaining, great fear, insomnia, etc.

Another question is, whether the abscesses should be opened early and largely. I am not for early incisions in acute idiopathic osteo-myelitis simplex. I patiently wait till pus shows itself under the skin, and open it then with a trochar without allowing air to enter. But in osteo-myelitis multiplex, especially where a dyscrasia is probably the cause of it, I open the abscess early with a large incision, in order to empty it fully, and thus to prevent the cheesy pus to become a focus for further infection, and then apply carefully and thoroughly drainage from the cavity of the abscess. This greatly reduces the pain, and I never felt the necessity to give narcotica in these cases, although I acknowledge that we cannot do without it in surgery. To keep the strength up is our paramount duty in such chronic osseous diseases, and I have great confidence here in Silicea and the preparations of lime. Silicea stands to Calcareo as periosteum to the bone, as simple periostitic necrosis to caries, *i. e.*, osteo-myelitis, for I consider under caries an interstitial chronic osteo-myelitis.

We must not expect too much from internal treatment. I saw most success from Calc. carb., especially in scrofulo-osteomyelitic processes. In idiopathic osteo-myelitis I recommend Calcareo hypophosphorosa. Another valuable remedy is *cider*, which is a combination of lime with an organic base. It seems to act more thoroughly than the simple Calcareo. Thus I treated a patient, who for years suffered from caries of the carpus, and of the calcaneus, so that the probe could penetrate the carious carpus between

the roughened bones. Asafoetida did nothing, but cider internally as well as externally applied, produced a perfect cure, and the man can even move the joint. Let others try it and report.

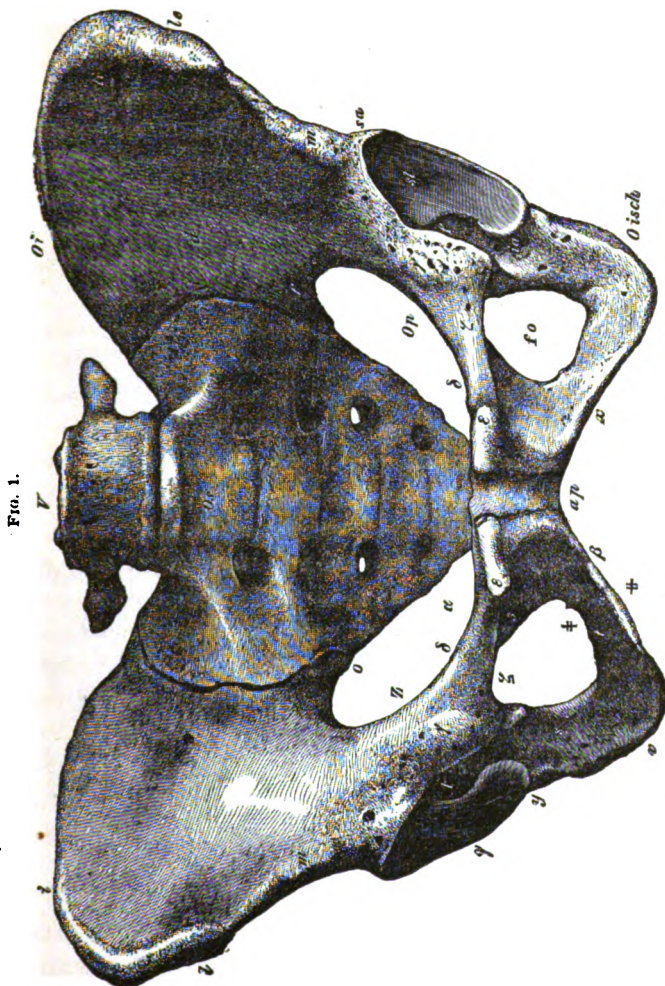


Fig. 1. Anterior aspect of female pelvis. The lines are made thus: *CD* runs from the upper portion of the pubes, cutting on the right side through *y*, on the left side through *z*; the external perpendicular line, *A B*, from the internal border of the spina anterior (*S*) downward, the central horizontal line, *E F*, in the pubic arch between the letters *op*, so that the space lying between the two crossing places (from *M*, *a b c d*, being divided in three equal parts), will have a length of five and a half centimetres.

Where everything fails, let us not be afraid of the knife. I discard the large incisions around the trochanter, formerly in use, as well as the long incision of Langenbeck, and prefer to remove the head by a rather small incision of one to one and a half inches.

I am convinced that the danger progressively increases with the size of the newly made wound, but with such a small incision we must be able to open immediately the capsule of the joint, and this can be done with mathematical precision.

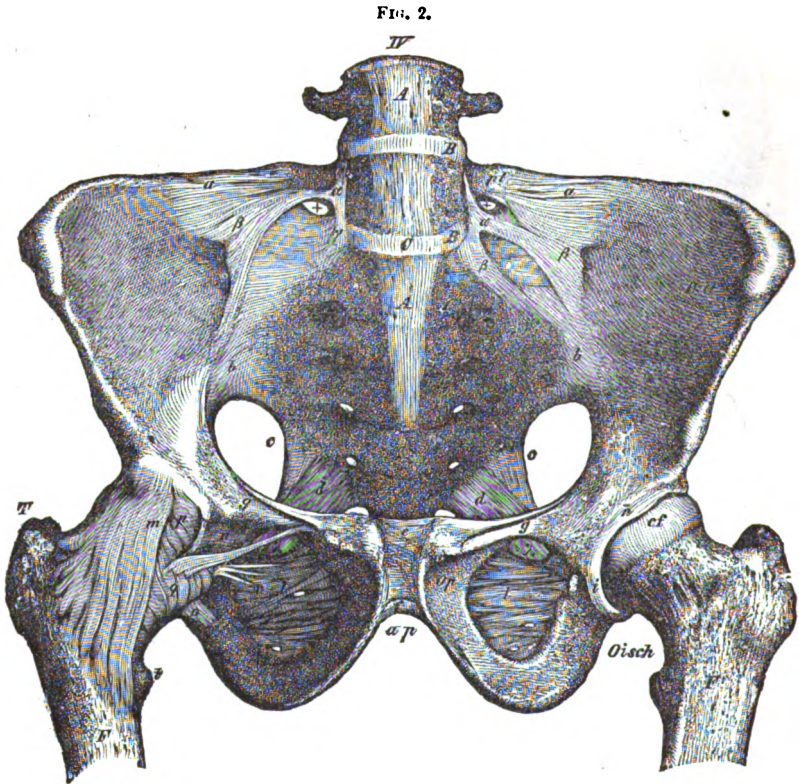


Fig. 2. Male pelvis with the ligaments of the hip-joint. The line *CD* is drawn from the upper edge of the trochanters (*T*), horizontally over the upper edge of the pubes, and cuts the letters *m*, *p*, *g*, *cf*. The other lines must be made as in Fig. 1.

Draw on the female pelvis from the internal edge of the spina, *s a*, on the male pelvis from the spina, *a s*, a perpendicular line, *AB*, downwards, a horizontal, *CD*, from the superior margin of the os pubis outwards, a perpendicular, *EF*, through the centre of the os pubis (*Schambeinfuge*, which is rather the groove of the os pubis), and mark the point where *AB* and *CD* meet with *α*, and that of *CD* and *EF* with *d*; we thus get the line *ad*. We divide



it now in three equal parts, *ab*, *bc*, and *cd*; *ab* is exactly the point where the anterior wall of the capsule of the hip-joint may be safely opened, with a perpendicular introition of the knife down

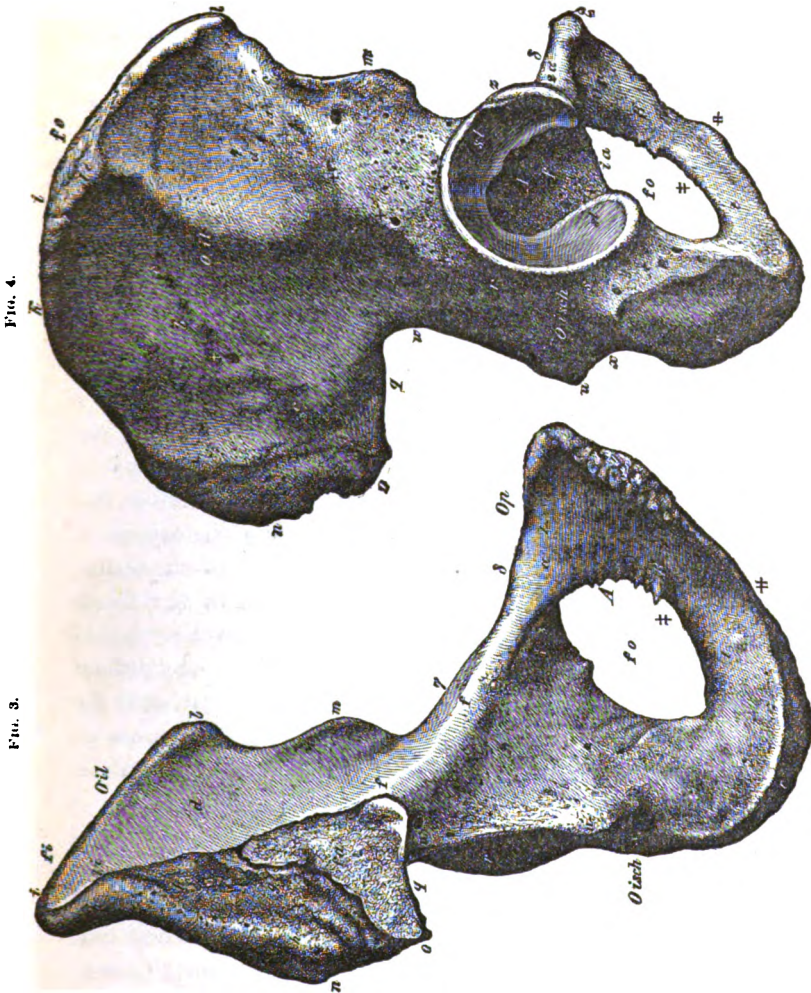


Fig. 3. The left os innominatum, from inside. The line *GD* is drawn from the spina anterior superior (*l*), obliquely through the acetabulum. The line *JK* cuts the letter *f* and *ca*. The former, as far as it is in the drawing, has a length of three and three-quarters centimetres, and is divided in three equal parts (*ab*, *bc*, and *cd*).

to the caput femoris. In *bc* the large vessels will be found, the artery in the centre, the vena cruralis inside, the nervus cruralis outside. Roser's line is drawn from the spina *as* (*GH*) to the centre of the tuber ischii, and divides it in three equal parts, *ab*, *bc*,

*cd*; *bc* comes then exactly behind the point of the trochanter and shows the borders of a line, where with strongly inwardly rotated thigh by directly piercing the thigh from *c*, the posterior capsule of the wall will be split upwardly to *b*. The nervus ischiaticus lies in the lower third outside of the incision. When thus the anterior and posterior wall of the capsule is opened, we introduce on the finger a curved, probe-pointed bistoury, and divide subcutaneously the wall of the capsule upwards, downwards, and laterally as much as possible, till we find the beginning of the neck of the femur moving easily about. Where we find by rotations of the foot the ligamentum teres exceptionally not destroyed, we turn during the anterior incision the head of the femur strongly outward, during the posterior incision inward, and divide the ligament with a small probe-pointed knife. A small, strong, and good-cutting saw is then introduced on the finger, and the usually softened neck of the femur closely cut off from the head of the femur. The latter is then carefully crushed without injuring unnecessarily the edges of the wound, and removed in parts, which is always easy with such loosened and rarefied osseous tissue, but we must separate carefully with a strong scissors the capsule at the points of insertion. After removal of the head of the femur, we remove with a strong forceps parts of the neck of the femur down to the trochanter, and smooth the edges of the surface. Sometimes we are obliged to remove carious places of the acetabulum with a sharp scoop or gouge. The hemorrhage is slight, with the anterior as well as with the posterior incision, and requires no specific precaution, especially as the gluteal arteries are not injured.

The cavity of the wound is then carefully drained, especially with the anterior incision, where it may be well to introduce from the beginning a reliable drainage-tube through the posterior wall of the capsule and the buttock. The wound itself is so small that it needs no sewing; we cover it with a protective, with carbolized wadding, and somewhat firmly with a roller (Lister's treatment). The adhesive plaster bandage for permanent distraction, must be put on carefully the day before the operation, in order that the treatment with weights may be initiated immediately after the operation, by application of six to ten pounds, ac-

ording to age and constitution. After-treatment must be simple, perfect cleanliness when necessary, daily syringing of the cavity of the wound, stagnation of pus and decomposition must be prevented by careful and cautious passing out or over by counter-incisions, where abscesses burrow under the skin, or by dilatation of the drainage. We have already mentioned the necessary internal treatment.

I am perfectly satisfied with the results so far gained, and hope that this method of operation will become a valuable addition in treating osteo-myelitis of the neck of the femur.—*A. H. Z.*, 13-15, 1874.

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#### ARTICLE IV.—Proving of *Yucca Filamentosa*, 30.

BY DR. CHARLES E. ROWELL.

DECEMBER 20TH. Have taken one-drop doses once in two hours; no effect. 21st. Have taken one-drop doses once an hour; no effect. 22d. Have taken two-drop doses once an hour; no effect. 23d. Have taken two-drop doses once in half an hour. This evening right side of nose constantly running, the left side dry; throbbing feeling in right side about twelfth rib, not painful; tongue coated white. 24th. Have taken no medicine to-day; pressing pain in both temples all day long; pulse 76 and full; strange feeling in temporal maxillary articulation; face flushed. 25th. Have taken no medicine to-day; a little pain in temples of an aching character; itching of inner canthus of left eye, with smarting after rubbing. 26th. Have taken drop doses once in two hours. At 6 P.M., momentary aching pain in zygoma, recurring several times. 27th. Have taken drop doses once an hour; increased number of stools (three) of natural color and consistency, but smaller than usual; face flushed; abdomen a little bloated. 28th. Have taken no medicine to-day; abdomen bloated; itching of inner canthus of left eye; running of nose; emission of a great deal of flatulence, which has no smell. 29th. Have taken



no medicine; face pale; dark rings under eyes; tongue coated white; three stools to-day, small but natural. 30th. No medicine; face pale; dark rings under eyes. 31st. No medicine.

January 1st. Have taken three-drop doses once an hour; no symptoms; at 9 P.M., I took six drops, and at 11 P.M., took ten drops. January 2d. Face flushed; pulse 76. 2 P.M., feel very despondent; "have the blues." 4 P.M., irresolute, changing mind about once in fifteen minutes; don't know what to do; can't keep easy. 6 P.M., very severe sharp pain in stomach, extending down into intestines, worse from pressure. 6.30 P.M., pain back of right ear; during the whole evening have had a great deal of flatulence discharged from below; abdomen much bloated; region of stomach sensitive to touch; dark rings under eyes. 8 P.M., redness of the whole nose; tongue coated white with elevation of scattered papillæ. January 3d. 8 A.M., pain in both temples, most severe on the right side; lasted all of forenoon; also a cringing feeling in both temples worse from motion. 1.30 P.M., dull sensation in head when others are talking to me; although I hear what they say, I do not seem to understand them; two minutes afterwards don't know what they have said. 2 P.M., I took five drops of medicine; ten minutes after taking it had a dull heavy pain in both temples, which seemed to extend into my eyes, causing considerable aversion to light; the arteries in my temples throb; face is flushed; pulse 82, and very full. 3 P.M., cramping pain in stomach; abdomen bloated; discharge of considerable flatulence. 9 P.M., aching pain in both temples; tongue looks as if it had been parboiled, with irregular elevation of scattered papillæ upon surface. January 4th. Woke up several times at night with an erection, but no sexual desire. Woke up at 6.30 A.M., and had to get up immediately and go to stool; stool was very copious; first part hard and very difficult to expel; hard stool was of large size, last part of stool soft; heavy aching pains in bowels before the stool; aching pains during and after stool; urine increased in quantity, specific gravity 28. Around the meatus urinarius is a circumscribed, œdematous, red swelling, extending about two lines out upon the glans; no sensation whatever in it; pale face. During forenoon sudden violent tenesmus, followed by discharge of wind, which relieved me of the pain; this occurred several

times. 10 A.M., itching of the inner canthus of left eye; very annoying; eye looks red. Tongue coated white at root and has a greasy look; tonsils dark-red color; not sore. The pharynx seems to be covered with granules and is of a dark-red color. A sensation as if something were hanging down from posterior nares; can't get it up or down. Wish I hadn't commenced to prove this drug. 6.30 P.M., after eating dinner, abdomen bloated very much, and had a sore sensation all through it; over stomach sensitive to touch; sore feeling in stomach; discharge of much scentless flatulence this evening; itching and smarting of left eye. At a lecture to-night was so sleepy that I could hardly keep my eyes open. My head has been itching all of the evening, very annoying, causing constant scratching and digging. January 5th. Urine increased in quantity, specific gravity 30. Tongue of a bluish-white color; appetite increased, and food tastes unusually well; ate half more breakfast than usual. Dark rings under eyes; pain in articulation of jaws; mind is constantly dwelling upon sexual subjects; have had an erection all of the forenoon; can't study; soon as I commence my mind runs off, and I begin to think of women. Intense aching in both temples, worse from motion and worse from heat, but at same time chilliness when away from stove. 12 M., throat not so red as it was yesterday; every time I look at throat can see a string of mucus hanging from uvula to the root of tongue. I am very sensitive to the least noise. Pulse 78, full and a little irregular. The arteries of forehead throb. Irritable condition of bladder; have to urinate often. Headache stopped at 6 P.M. I feel unusually well this evening. Itching of inner canthus of left eye. January 6th. Erections all night long, but no emission. Lewd dreams. 6.30 A.M., had to get up and go to stool, which was copious; the first part hard, last part thin and watery; aching pains in bowels before and during stool; not so severe after stool. Urine increased in quantity, normal color, and specific gravity 30. Profuse watery discharge from nose; discharge mild. Pharynx, tonsils, and uvula of a dark-red color, and seem to be covered with a greasy-looking mucus, which is stringy. Aching pains in bowels, relieved by a discharge of flatulence, but recurring. Abdomen bloated. White coating at root of tongue. Constant desire for stool. 7.15 A.M.,

copious thin stool, yellowish-brown in color, with smarting of the anus during stool; sat a long time at stool, and strained very hard; when stool once started, run away like water; pulse 72 and regular. 3 P.M., a little headache in temples; hard work to keep my mind upon the lectures. January 7th. A very sore pimple upon end of tongue. Mind wanders from lectures. 3 P.M., momentary pain in temples. My abdomen a little bloated this evening, with some pain. January 8th. 2.30 P.M., a momentary pain in temples; mind wanders from lectures.

*Condition when I commenced to prove the drug.*—Bowels are regular; appetite good. In regard to state of bowels, should say that they move once a day. Pulse 76. Specific gravity of urine about 26 or 28, varies between. Am a little inclined to be irritable in disposition; health good. Got no effect from first vial of drug.

January 9th. Intense headache all day long in both temples; worse from any noise; sore crampy pains in muscles back part of left leg just above the ankle; feels as though it were sprained. This pain lasted about ten minutes. At 3.30 P.M., had a severe crampy pain in the right side of chest, *very severe*; was worse when stooping over, and partially relieved by sitting straight or leaning a little backward; lasted about five minutes. Arteries of temples throb; headache somewhat easier when sitting still, but worse when moving around; is worse from any noise; a throb in head with every step; appetite poor; hard, rattling cough; some coryza; feel feverish; pulse 84; can see arteries in hands throb; momentary aching pain in vicinity of heart; I think I have caught cold; use wrong words in writing; feel very despondent and irritable; yellow color of face.

*My Wife's Proving.*—December 25th, took three drops in the morning. After breakfast, had severe crampy pains in abdomen; had to lie down, which seemed to relieve them somewhat; pulse full and heavy; face flushed; the pains are worse if she stirs, but better when keeping quiet. These pains lasted about half an hour, and was followed by a diarrhœa. Had several stools of a yellowish color within an hour; sharp pains in lower portion of bowels, both before and after the stool. This evening, has heavy frontal headache; aching pain in stomach; great rumbling of wind in

lower portion of bowels; flushed face, with burning of face; her face sweats. December 26th. Dark rings under eyes; flushed face; some slight pains in stomach. Could not induce her to continue the proving. January 11th. Just received a letter from wife, in which she states that she has had a "backache" ever since she took the drug.

*My Boy's Proving.*—About nine months old. December 29th, gave him two drops in the morning. 11 P.M., both cheeks very red. 12 M., is very restless, and seems very feverish. 3 P.M., wants to be held all the time. December 30th. Was some restless last night. 8 A.M., gave him two drops. 9 A.M., face flushed; restless; plays but little while with his playthings, then wants to be held. This evening, sat up two hours after his usual bedtime. December 30th. Little restless. Stopped proving.

*My Brother, Edward E.'s, Proving.*—December 26th (when commenced proving have hard cold). Have taken two drops regular once in two hours with no effect, except to loosen cold a great deal. December 27th. Have taken two drops once an hour; have had colicky pains in bowels, with discharge of much flatulence; pains in bowels are worse from pressure. December 28th. Have taken two drops once an hour; the number of stools increased, but smaller in size; some pains in bowels; some discharge of flatulence as yesterday. December 29th. Taken no medicine; feel very hot; have no appetite; pulse is 80; headache in forehead; crampy pains in knees. December 30th. No medicine to-day; pulse 78; flatulence. In evening, had tight feeling around neck; had to take off collar.

*Buck Carbeter, medical student.*—Have nasal catarrh, otherwise healthy. January 1st. Have taken three doses of two drops each to-day. This evening very sleepy, and went to bed two hours earlier than usual. January 2d. Have taken three drops about once in three hours to-day. I think my catarrh is worse; bad smell from mouth (so others say). 8 P.M., momentary dull pain over left eye. 9 P.M., pain in left shoulder-blade. 9.15 P.M., pains in intercostal muscles at upper portion of the chest. 10 P.M., face flushed; disinclination to study. January 3d. Abdomen sensitive to touch; dark rings under eyes; continued discharge of flatulence; catarrh *is worse*. January 4th. Erection several times

at night; constantly recurring inclination to go to stool relieved for a time by passage of wind; frontal headache of pressing character; stools increased in number; brown color; softer consistency than usual; tenesmus after stool; abdomen sensitive to pressure; after stool pain of gripping character, relieved by bending forward; tongue pale, reddish, and flabby; elevated papilla; teeth marks upon the edge; trembles when puts it out. January 5th. Taste in mouth like rotten eggs; painless redness around the opening of urethra; when urinating, burning sensation; urine slightly increased in quantity and normal color; face pale; dark rings under eyes; very irritable. January 6th. Dryness of back part of mouth; soft palate seems to be dry; had to drink water to moisten it; abdomen bloated. January 7th. Decreased frequency to urinate. 3 P.M., momentary pain in left temple. January 8th. Have got the blues; unsatisfied feeling. January 9th. Restless last night.

*H. D. Baldwin*, medical student.—December 14th. Took a dose at 8.25. At 9.15 had a severe pain in left shoulder-blade. 10.30, a coldness of the scalp upon left side of head, as though cold air were flowing upon it. December 15th. Coldness; cannot bear to be away from the fire. Inability to remember anything that I read, with severe pains, which appeared first upon the right side, then in apex of heart. December 16th. Constriction of muscles of the neck; seemed as though were going to draw the head backwards. Inability to think. Use the wrong words when talking. Eyes feel hot and inflamed, although no objective symptoms of inflammation are present. A sensation of constriction in whole chest, also in heart. The symptoms interfering with my studies antidoted the effects with *Cocculus*.

#### RÉSUMÉ.

*Mind*.—<sup>(2)</sup> Very despondent; irresolute; changing of mind about once in fifteen minutes; don't know what to do; can't keep easy; wish hadn't commenced to prove the drug. Hard work to keep mind upon lectures; mind wanders from lectures; <sup>(2)</sup> irritable; use wrong words in writing; very sensitive to noise; inability to remember anything read; use wrong words when talking; child wants to be held all of the time; can't study; as

soon as commence mind runs off, and begin to think of women; feel unusually well in evening; mind constantly dwelling upon sexual subjects. (3) Child is restless; plays but little while with playthings, then wants to be held; unsatisfied feeling. (2) Have got the blues; disinclination to study; forgetfulness; dull sensation in head when others are talking; hear what they say, but do not seem to understand; symptoms interfere with studies. January 11th. Mind constantly wandering from study; can't remember anything; in writing, write the wrong word; discouraged.

*Head.*—Pressing pain in both temples; (4) aching pain in temples; pain in both temples, worse upon right side, lasting all of the forenoon; dull heavy pain in both temples, extending into eyes, causing considerable aversion to light; cringing feeling in both temples; head itched all of the evening, causing scratching and digging. (2) Intense aching in both temples; worse from motion, and worse from heat of stove, but at the same time chilliness when away from the stove. (2) Headache stopped at 6 P.M. Little headache in temples. (2) Momentary pains in temples; headache easier when sitting still. (3) Worse from noise; throb in head with every step; heavy frontal headache; headache in forehead; momentary dull pain over left eye; frontal headache of pressing character; momentary pain in left temple; coldness of scalp upon the left side, as though cold air were blowing upon it. Constrictive pain in muscles of neck, seems as though were going to draw the head backwards; in the evening, tight feeling around the neck; had to take off collar. (3) Arteries of temple throb. (4) Momentary aching pains in the zygoma; strange feeling in the articulation of jaw; aching in articulation of jaw; pain back of right ear; headache worse from motion.

*Eyes.*—(4) Itching sensation of inner canthus of left eye, (2) with smarting when rubbing; eye looks red; eyes feel hot and inflamed; no objective symptom of inflammation; aversion to light, with temporal headache.

*Nose.*—Right side of nose constantly running, the left side dry; running of nose; whole nose red; *catarrh in nose*; sensation as if something were hanging from posterior nares which can't be hawked up or swallowed; profuse watery discharge from nose;

discharge mild; *existing cold is better*; some coryza; nose constantly running.

*Face.*—(10) Face flushed; (5) face pale; (10) dark rings under eyes. Flushed face, with burning of face; face sweats; both cheeks very red; yellow color of face.

*Mouth and Throat.*—(2) Tongue coated white, (3) with elevated papilla (scattered); tongue looks as if parboiled, pale reddish color of tongue, tongue flabby; imprint of teeth upon edge; wrinkles when put out; (2) tongue coated white at root, and has greasy look; tongue of bluish-white color; very soon pimple upon tip of tongue lasting five days. (3) Tonsils dark-red color; not sore. (2) Pharynx and uvula dark-red, and seem to be covered with a greasy mucus, which is stringy; pharynx seems to be covered with granules; every time I look in mouth can see a string of mucus hanging from uvula to the root of tongue; bad smell from mouth; (3) taste in mouth like rotten eggs.

*Stomach and Abdomen.*—Appetite poor, appetite increased; eat half more than usual. Very severe sharp pain in stomach extending into intestines; worse from pressure. (2) Region of stomach sensitive to touch; aching pains in stomach; slight pains in stomach. (2) Colicky pains in bowels, with discharge of much flatulence; (2) pains in bowels worse from pressure. (2) Abdomen sensitive to touch; continued discharge of flatulence below. (7) Abdomen bloated; (7) emission of great deal of scentless flatulence. Crampy pain in stomach. Rumbling of wind in lower portion of bowels. Severe crampy pains in abdomen; had to lie down, which seemed to relieve them somewhat; these pains are worse when she stirs, but better when she keeps still. (3) Aching pains in bowels relieved by discharge of flatulence. After eating dinner abdomen bloated very much, and had sore sensation all through it; sore feeling in stomach. (4) During forenoon sudden violent tenesmus followed by discharge of wind, which relieved me of the pain.

*Stool and Anus.*—(5) Increased number of stools, but (4) smaller than usual; (2) had to get up as soon as awake, and go to stool. Diarrhœa; several stools of yellowish color within an hour, with sharp pains in lower portion of bowels, both before and after the stool; stools brown color; softer consistency than

usual, with tenesmus after stool. Griping pain after stool relieved by bending forward. Constantly recurring inclination to go to stool, relieved for a time by passage of wind. First part of stool large size, and hard, last part softer consistency; the first part very difficult to expel; heavy aching pains in bowels before stool; aching pains during and after; constant desire for stool. Copious thin stool, yellowish-brown in color, with smarting of the anus during stool; sat a long time at stool, and strained very hard, but when once started run away like water.

*Urinary Organs.*—<sup>(1)</sup> Urine increased in quantity. Irritable condition of bladder; have to pass urine often, <sup>(3)</sup> specific gravity increased. June 26th to 30th. Burning while urinating; <sup>(2)</sup> a painless circumscribed œdematous swelling (red) around the opening of urethra; decreased inclination to urinate.

*Sexual Organs.*—Erections several times at night; no sexual desire. Erection all night; no sexual desire; no emissions.

*Respiratory Organs and Chest.*—Pains in intercostal muscles at upper portion of the chest. <sup>(2)</sup> Pain in left shoulder-blade; a sensation of constriction in whole chest; also in heart. Very severe crampy pain in right side of chest; was worse when stooping over, and partially relieved by sitting straight up or leaning a little backward, lasting about five minutes. Momentary aching pains in vicinity of heart. Hard rattling cough. Severe pains, which appear first upon the right side; then in apex of heart. Painless throbbing in right side about the twelfth rib.

*Extremities.*—Can see arteries in hands throb. Sore, crampy pains in muscles at back part of left leg, just above the ankle; feels as though it were sprained; this pain lasted about ten minutes. Crampy feeling in knees.

*Sleep.*—Lewd dreams, but no emissions; <sup>(3)</sup> restlessness at night. In evening, at lecture, so sleepy that I could hardly keep awake. Child did not go to sleep till two hours after usual time. Was so sleepy that I had to go to sleep two hours earlier than usual; woke up several times at night with erection, no sexual desire; fever; pulse increased, <sup>(2)</sup> 76 and full, 82 and full; <sup>(2)</sup> 78, full and irregular, 72 and regular; pulse 80; pulse 84. Feel very feverish; pulse full and heavy; flushed burning face, with sweat upon face. Child is very restless, red cheeks, and seems



very feverish. Coldness; cannot bear to be away from the fire; (2) intense aching in both temples, worse from motion and worse from heat of stove, but, at same time, chilliness when away from stove.

*E. L.*, medical student, 19 years old, rather indolent disposition; have been troubled with sweating of scrotum, also a milky discharge from urethra after micturition. This discharge most in forenoon; otherwise healthy. January 1st. Have taken two drops once in three hours. This afternoon, sensation of fulness in forehead; abdomen a little bloated. January 2d. Have taken two drops once in three hours. I feel lazy; don't feel like studying at all. This forenoon, a pressing feeling in forehead, most on left side; my nose runs; eyes feel as if sand were in them; aching pain in knees, also pain in left side under the arm; when I go out of doors my eyes run water. January 3d. Have caught a bad cold somehow, so discontinued proving. January 10th. Since taking drug the sweating of scrotum has entirely stopped, and the discharge from urethra is a great deal less after urinating.

*Dr. C. W. Baker's Proving.*—Friday, one dose of two drops; no effect. Saturday, two doses of two drops; no effect. Sunday, 11 A.M., took four drops; 3 P.M., took four drops; 6 P.M., severe frontal headache through temples; drawing pain; pain under the left patella, up thigh, and left lateral side of body; sleep disturbed; very restless. Monday, 9 A.M., four drops. Bowels have not moved for three days. Tuesday, sleep disturbed; headache; uncomfortable feeling all over; bowels moved; very copious stool, with great discharge of wind. Wednesday, pain all over body, especially on the left side; sharp pain in apex of heart, running up into the heart. Thursday, have all the symptoms of fever; feel best while keeping quiet. Discontinued proving, owing to interfering with my studies.

*De Lancey H. Barclay*, medical student.—January 12th, seven drops in the morning. This forenoon the lower wisdom tooth of left side has ached most of the time; sound tooth, and has never ached before; abdomen bloated all of the afternoon, with a sensation of fulness. January 13th. Have taken, on average, about two drops once in two hours. Have had discharge of great deal of flatulence from below; soreness of stomach; running of left

side of nose, with dryness of the right side. January 14th. Every time I try to smoke it causes a frontal headache, with feeling of fulness over the eyes; the smoking of even the smallest amount of tobacco causes this. Diarrhœa; several operations this forenoon; nose stopped up; have all of the symptoms of commencing cold; abdomen bloated; with stool is a great deal of flatulence; the diarrhœa was watery and painless. January 15th. Have all the symptoms of a hard cold; head stuffed up; running from nose, etc. January 16th. Cold is worse; have constant sneezing. January 17th. Sweetish taste in mouth; cold is worse; nose constantly running; sides of nostrils are sore, it may be from constantly wiping my nose; constant sneezing. January 18th. About the same. January 19th, 20th. Have not had an operation from bowels for three days or passed urine for two days till this evening; was high-colored; not very profuse. January 21st. Was restless last night. Took a dose of Puls. for my cold.

January 11th. Think that I have taken a bad cold, and that the symptoms I have now are due to that cause, but at Professor Allen's suggestion, I keep a record of them. Have running from nose; tickling sensation in my throat, causing cough; a full sensation upon the right side; occasionally a sticking sensation upon the left side of throat; bowels bloated this evening, with severe pain in lower portion. In writing use wrong words; great forgetfulness; mind wanders from lectures. Very irritable; discouraged; can't remember what I study. January 12th. Was restless last night, and chilly all night. Coughed a good deal at night; most last part; wake up and cough, and then go to sleep again. This morning my eyes smart and burn, and have a sore feeling, with sensation as if sand were in them. Constantly building air-castles; as soon as I try to study begin to think of something else. Urine decreased in quantity. When I look into my throat it makes me gag. The left eye feels the worst, and both look inflamed; trouble me most when I try to study. Cough till I gag. Mucous râles; on the right side of septum nasi small sore. Inclination to dispute. January 13th. Restless last night; did not cough as much as did night before, but had frightful dreams, waking me from sleep with violent palpitation of heart. Chest seems full of mucus, but no expectoration with cough. Diarrhœa;

several operations this forenoon ; smarting of anus during and after stool. ANGER, followed by lateral headache, with inability to study ; lasting about an hour and a half. Since 3 P.M. until about 6 P.M., intense headache in left temple. 6.30 P.M., while washing crampy pain ; very severe a little below axilla of left side, lasting about five minutes. The bottom of my feet are sore. I am both despondent and discouraged. Can't remember anything. Eyes are very sensitive to light. My nose is beginning to run more than it has. January 14th. Slept better last night. Cold little more loose. The saliva has feeling in mouth like white of egg. When I spit it drops in a lump ; seems clear and viscid. The discharge from nose is hard, scanty, and of same nature. When cough is great, rattling of mucus in chest, but no expectoration. Sore in nose a little larger. Mind wanders from study. Had rather not study. Mind wanders from lectures, and forget to take notes. January 15th. Rested well last night ; do not cough so much. Saliva increased in quantity and a little ropy. Itching of inner canthus of left eye. Chest seems full of mucus, but cannot raise anything. Coughed most in afternoon. January 16th. Have coughed scarcely any to-day. This evening headache in right temple. Nose is very sore upon both sides ; is full of scabs and sores ; great inclination to dig and bore in nose. January 17th. Chest full of mucus ; not much cough. Nose very sore ; both nostrils affected. January 18th. Nose very sore ; a small boil in left nostril. January 19th. Restless last night. Erection most of night, with lewd dreams, but no emission. I am all discouraged. Can't remember anything I read or study. Am afraid I shall not graduate, or, if I do, that I shall not succeed afterwards. Do not think these symptoms caused by the drug. I feel very weak. I am very irritable, and inclined to get angry at trifles. Make mistakes in writing and talking. When I try to think have a vacant feeling of mind. I feel played out. A little headache in both temples ; throbbing of arteries in temples. Am not satisfied with anything or anybody. Bowels are constipated. January 20th. Bowels still constipated. Cough a little loose, and not one-half as often ; I feel some better. January 21st. No cough at all to-day. Nose has run a great deal, especially left side. In left ring of nose a circumscribed hard swelling ; very

painful. All of afternoon very severe aching pain in bone above knee of right leg, and running down into the joint. Disinclined to study. January 22d. Hard, heavy ache in right side of head all of the afternoon. Two operations from bowels this forenoon. No cough. Can study better, and feel better than have for long while, excepting aching of head. January 23d, 24th. Throbbing headache in the left temple. Painless pulsation in left arm. Aching of left ear, deep in, while walking in snow-storm; relieved in the house. Aching of muscles of left leg below the knee; mostly in calf.

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## ARTICLE V.—Posterior Spinal Sclerosis.

BY RICHARD K. VALENTINE, M.D.

### HISTOLOGY OF THE "SPINAL CORD."

THE most recent researches into the minute anatomy of this portion of the nervous system, the spinal cord, show that it terminates on a level with the body of the first lumbar vertebra in the adult, at a length of from sixteen to seventeen inches, and a weight when divested of its membranes of an ounce and a half. As seen on cross-section, it is composed of a gray and white material.

The former occupies the centre, and is arranged in the shape of a Latin capital H, having anterior and posterior horns. It varies in amount in the different positions, being greatest in the lumbar, less in the cervical, and least of all in the dorsal region.

The enlargements in the two former positions, are due to this increase of gray matter at those points. The white substance occupying the circumference of the cord, diminishes in amount as compared with the gray from above downwards, till finally it altogether ceases before reaching the "filum terminale." For convenience sake, the anterior and posterior median fissures, and the lines denoting the exit of anterior and posterior spinal nerves, are taken as division-marks for six columns, an anterior, lateral, and posterior on either side. The white material is surrounded

completely by a connective-tissue layer, a remnant of the pia mater, having its fibres circularly arranged, and which remains after the separable portion of the "delicate mother" is peeled off, *its* fibres taking a longitudinal course. From the dependent connective-tissue layer there are innumerable septa, piercing the white matter from many points around the cord, and finally they reach the gray matter, wherein they unite with each other in a most complete manner.

According to Gerlach,\* "the network thus formed is of elastic tissue." Kölliker† considers it as a network of stellate cells, presenting this peculiarity, that their processes repeatedly branch and communicate with each other, and with neighboring cells. However, taking for granted the fact that this tissue is a species of the connective, and that its arrangement is somewhat complicated, we find that its office is an important one, acting the part of a cement, binding together the longitudinal nerve-fibres, and acting as a general support to the nerve column, hence the name "neuroglia" has been given it. This tissue is continuous with the posterior gray commissure also, by reaching to the bottom of the posterior median fissure; whereas the superficial layer of the pia mater accompanies it only half way. The edges of the fissure are very closely united by the deep layer, so that really no fissure does exist in the true sense of the term. Besides the elastic fibres found in carefully prepared specimens of this tissue, there are cellular elements, some containing highly colored nuclei, and each bearing a number of processes, branching or not, and which may be separated from one another with but little difficulty. In the white portion of the spinal cord there is a great amount of very fine granular matter, which fills in what would otherwise be spaces, for example, between the nervous fasciculi on the one hand, and the septa as they pass between the fasciculi to reach the gray matter on the other, and finally when the septa disappear altogether this granular substance fills their places. This contains a vast number of cellular elements, exhibiting a number of transition shapes, from those consisting of small masses of protoplasm around a nucleus, to the

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\* Stricker, p. 626.

† Kölliker, Handbuch der Gewebelehre, Fünfte Auflage, S. 267.

completely developed connective-tissue cell with its processes. The sheath of Schwann has been doubted by some as surrounding the nerve-fibres of the central organs. It, however, may be only invisible in teased preparations, because of the close relation between it and the neuroglia; thus, in a transverse section of the white substance, the limit between the nerve-fibre and neuroglia is plainly marked by a sharply defined line. "This is supported by the fact, that in micro-chemical reactions the membrane of Schwann, known to belong to the elastic tissues, can be demonstrated, often terminating in sharply cut ends, and can be followed close up to the limit of the myeline."\* The thickest nerve-fibres are found in those portions of the anterior columns which border on the ant. med. fissure, though the diameters vary greatly as a rule, though those at the periphery are larger than those next to the gray matter. The columns of Goll, or the post. med. columns, are found one on either side of the post. med. fissure. They have a wedge shape, and are composed of small bundles of fine fibres bound together. They are separated from the post. columns by fibrous bands. So far as can be ascertained the proportion of connective tissue (neuroglia) and nerve-fibres is nearly equal in the ant. and lateral columns, but in the last-named position the connective tissue preponderates as an advance towards the gray matter. Particularly rich in this tissue are the post. columns and columns of Goll, and hence their deeper red appearance, when stained with a carmine solution.

The general character of the gray substance having been given in the first part of my discourse, I shall now enter more deeply into its histological peculiarities when compared with the white.

The gray matter in this situation contains neuroglia (connective tissue) of the network variety only (the white containing both network and fibrilla). It (gray substance) is made up mainly of nerve-fibres, which are easily distinguished from those of the white material by their frequent divisions; some are surrounded by myeline, others not, and by frequent divisions and subdivisions the original nerve-fibre is much reduced in bulk. Of such fibres then, by far the greater amount of gray matter consists, which with the nerve-cells are characteristic of this material. These cells are multipolar

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\* Gerlach, S., p. 628.

bodies, containing a large nucleus, each provided with two vacuoles and a larger or smaller number of pigmentary granules, which latter seldom if ever make their appearance in the processes. These cells are largest in the anterior cornua, smallest in the posterior, and intermediate in size are those situated to the sides, and a little back of the central canal; in the last position they are known as the columns of Clarke. With the staining fluids now in use, it is impossible to distinguish in the gray matter which is nerve and which neuroglia fibre; and again, which are nerve-cells, and which those of connective tissue; and particularly is this difficult when the examination is made of small cells like those of the posterior horns. Dieters\* has made an important discovery in nerve-cells of this ganglionic matter: that among the cell processes generally present, there is one which never branches. But to discover such a cell with its process is rare, since it is generally broken off while undergoing preparation; the process being exceedingly thin nearest the cell, but thickening gradually as you advance from it. This was a most important discovery in relation to the origin of spinal nerves, for at a certain distance from the cell the process is seen to take on a myeline covering, itself constituting the axis cylinder. And now, whether this nerve-process ascends to the brain, or assists in forming a spinal nerve, is yet an open question.

Dieters\* assumed the latter view, and termed the fibre a "nerve-process," and to the branching fibres he applied the name "protoplasma processes." His views are most acceptable, since in a finely prepared nerve-root of the anterior horn, the "nerve-process" may nearly be followed to its destination; but the difficulty is much increased when we attempt to solve the problem of nerve origin in the posterior cornua, where the cells are much smaller and more scattered among nerve-fibres. It hardly appears natural though, that the anterior and posterior nerve-trunks should originate in the same way, and according to Gerlach,† "that rich fasciculation of nerve-fibres which is met with in those parts of the posterior cornua, lying in front of the substantia gelatinosa, seem to indicate that the posterior root-fibres are not directly con-

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\* Stricker, p. 635.

† Gerlach, S., p. 637.

ned with nerve-cells, but that they first enter into this network of nerve-fibres in the gray matter, and that it is through them that the connection between the fibres of the posterior roots and nerve-cells is established."

Dieters\* considers that "the last branches of the protoplasma processes are none other than axis cylinders of the finest nerve-fibres, and looks upon these as a system of nervous links uniting the ganglionic cells among themselves." Gerlach† corroborates these views. So far as regards the invariable presence of processes on ganglion cells, of the spinal gray matter, Gerlach‡ states, with almost positiveness, his having found none on the cells of Clarke's columns, and hence his statement, that "all ganglion-cells do not possess nerve-processes."

#### COURSE OF FIBRES IN THE SPINAL CORD.

The nerve-filaments in the white material are found to take a vertical, horizontal, and an oblique direction. By far the greatest number belong to the first class, and uniting in larger and smaller bundles, they proceed upward to the medulla in a parallel course, being bound together and retained in position by neuroglia septa.

It is hardly likely, according to Gerlach,§ that these bundles communicate with each other below the medulla oblongata.

Horizontally disposed fibres compose the anterior white commissure, formed by their passing from the right anterior horn, across to and up in the left anterior column; and in like manner fibres from the left anterior cornua, cross here and pass upwards in the right anterior column.

The lateral and posterior columns contain such horizontal fibres also; in the former position they proceed outward from the anterior horn, when turning upwards they continue their course in the lateral tract. Those fibres of the posterior root which are continuous with the fibres lying in front of the substantia gelatinosa, proceed in a similar direction; "though in this position it is not easy to determine positively whether they come from the posterior horn, to continue their course in the posterior column, or whether they belong to those posterior root-fibres, which, before entering the

\* S., p. 638. † G. Stricker, p. 638. ‡ G. S., p. 637. § G. S., p. 630.



posterior horns, ascend or descend in a certain length of the posterior columns, then making a turn, penetrate the substance of the posterior horns."\* And again, in the posterior columns we have some horizontally coursing fibres which enter directly the gelatinous substance; and still others which pierce that portion of the posterior column bordering the substantia gelatinosa, therein to ascend, or perhaps descend, for a certain distance before again entering the gray matter.

The oblique fibres are found in the anterior roots of those in the cervical region, but more particularly in the medulla, where they are the beginning of the pyramidal fasciculi.

From the cul-de-sac in the floor of the fourth ventricle there extends throughout the entire length of the gray matter of the cord, and approaching the posterior median fissure on its descent, a canal, which in the young subject contains the cephalo-rachidian fluid, is lined with cylindrical epithelium, the latter covered over with vibratile cilia. In the adult, on the other hand, this canal is choked up, as it were, and especially in the cervical region, with a product of epithelial cell proliferation; and its cilia are also destroyed.

Anterior to this canal cross to and from the anterior cornua nerve-fibres, and the two sides in front are thus united. They are the anterior commissural fibres of gray matter. Posterior commissural fibres pass and repass back of this canal; they comprise a larger number than do the anterior, and are in immediate contact with the connective-tissue layer which dips down into the posterior fissure.

In the anterior cornua we find three large nerve-cell groups, which are particularly well defined in the cervical and lumbar regions; where the largest is seen to lie laterally, next in size anteriorly, and the smallest to the inner side. The groups in the dorsal region contain fewer cells, and the three are more or less blended together. There are other cells besides these which have no definite positions. The anterior cornua are traversed by nerve-fibres which originate either from "nerve-processes," or the network of "protoplasma processes;" these pass into the anterior

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\* Stricker, p. 630.

column of the opposite side, as well as into the lateral column of the same side. Clarke's columns, which are nothing more than conglomerations of nerve-cells, are distinctly visible in the central dorsal region of the cord, and become less and less so as we approach either the cervical or lumbar enlargements, reaching which the columns totally disappear. There are nerve-bundles in close relation with these cell groups. Thus two bundles of fibres start out from the anterior portion of Clarke's columns; the one passes forward to another group of cells, while the other may turn backward, and likely outward; its ultimate destination not yet having been ascertained. There is a natural division of the posterior cornua into an anterior and posterior portion, of which the latter constitutes the "substantia gelatinosa," peculiar in that it contains no network of fibres, and is rich in a connective tissue of the cellular variety, composed of nuclei surrounded by small amounts of protoplasm. Its substance is traversed by a few bundles of nerve-fibres, which pass horizontally forward from the posterior roots of the posterior columns to the anterior portion of the posterior horns. The gelatinous substance presents different shapes on transverse sections in various parts of its length, being more circular in the lumbar region than elsewhere. The anterior division of the posterior horn is composed mainly of horizontal and vertical nerve-fibres; the former are noticed frequently to subdivide. The latter, or vertical fibres, proceed upwards along the inner and anterior border of the substantia gelatinosa.

This nerve-mass is connected with the posterior columns and posterior nerve-roots, by horizontal and oblique fibres, which pass backward through the gelatinous substance, and others and finer nervous filaments passing forward through this substance; the latter set may either stop at the vertical column, or pass beyond it. The posterior cornua contain some cells, which are much scattered through those portions in which the network of nerve-fibres exists.

After the anterior spinal nerve-fibres have passed obliquely through the anterior columns, and pierced the anterior cornua, it may easily be seen how they are directly continuous with the "nerve-processes," as was supposed by Dieters. The anterior spinal nerve-fibres, at their origins, are distinguished as internal

and external sets; the former pass horizontally across to the opposite column, decussating in the median line with a similar set from the other horn, and in the opposite column they change their course to that of vertical, and pass upwards. The latter (external) pass at first to the lateral columns, and then ascending, finally decussate with those of the opposite column, in the medulla oblongata.

The posterior root-fibres pass from without, horizontally, towards the median line, dividing into two bundles.

The external of these divides into smaller fasciculi, which piercing the gelatinous substance reach the vertical column of fibres on its inner surface; here some are directed upwards, and others take a downward course: they soon, however, change to a horizontal direction, and pass forward to reach the nerve-fibre network in the anterior division of the posterior horn. The internal (larger fasciculus), lying on the inner and posterior side of the gelatinous substance, bends here and takes a vertical direction, ascending or descending for a short distance in the posterior column, and then running its original direction, a portion traverses the inner side of the jelly-like substance, while the remainder enters the posterior horn; further than which it is utterly impossible to trace the fibrillæ, they so much assimilate in preparations other nerve-processes in this region. The many subdivisions undergone by posterior spinal nerves, immediately after they enter the posterior columns, tend to show that many are lost in the nerve-fibre network of the posterior horns; others proceed forwards, and again others inward.

The former belong to the posterior roots, and farther forward enter into the formation of the nerve-fibre network; the latter become commissural, crossing behind and in front of the central canal.

#### PHYSIOLOGICAL ACTION OF THE SPINAL CORD.

Now that you have waded through the preceding *brief* description of the minute anatomy of this most complex organ, I can imagine that something a little more digestible mentally will be acceptable just here. And as this something is to be found in none other than physiology, why I rather guess we had better

take a dose of it, keeping in mind the while its secondary action, when administered in large doses—to depress.

The all, above, is purely theory; the practical is to be found below.

Having gained a better knowledge of the close connection between the brain and cord, also between the lateral halves of the cord, and how unlike in mechanism are the anterior and posterior cornua, and consequently the difference in origin of anterior and posterior spinal nerves, by our success in wading, certainly we are better prepared, and can appreciate more clearly, by what means *nerve-currents* traverse its substance, connectedly or not; although the inherent principle, the cause of its action, is as obscure from man to-day as ever it was. However, experiments have taught, and many years before the time of Bergh, luckily for the good of mankind, the locations of the different powers of “sensation” and “motion.”

Hence it is we know, that by dividing or ligating a nerve-trunk anywhere outside of the canal, the result will be to completely paralyze both the sensation and motion of the parts supplied by it. On the other hand, if we merely irritate this trunk, there results pain seemingly in the part supplied by its sensory filaments, and convulsions of those muscular fibres supplied by its motor filaments. The same result may be obtained by applying irritation to the posterior root, within the canal; but if the application is made to the anterior root, convulsive movements alone attend it.

This last experiment assists in proving what Magendie,\* by a course of successful experiments, has fully proven, “that a nervous action is manifested in two opposite directions.” Thus, if an opening be made to the canal and a posterior root cut, by irritating the separated extremity, no result whatever will obtain; whereas, if the same be applied to the attached end, evincement of pain will immediately follow. And now let the anterior root be severed and the posterior left uninjured, then irritating the free extremity will occasion convulsions in the muscle or muscles supplied by it, and nothing at all will come from irritating the

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\* Journal de Physiologie Experimentale, vol. ii, p. 276.

attached end. This simple experiment, on so complex a structure, locates the power of sensation in the posterior cornua, and the motile power in the anterior horns. Also the anterior, with the lateral, columns convey from the brain willed motion; this last fact may be clearly illustrated by a section of them, when it will be found that the power to will an action is completely lost on the parts below the severance.

Then we learn from the above few experiments that a conscious sensation, arising at the periphery, traverses the sensory fibres to the posterior cornua when passing upwards to the brain, where a motor impulse originates, and this traversing the anterior and lateral columns, reaches the motor root, and is passed by the motor nerve, and gives rise to a contraction of the muscular fibres supplied by it.

We have a crossed action of the spinal cord, as a result of the decussation of its lateral columns in the medulla oblongata, and hence an injury of the right hemisphere of the brain, or of the medulla above the point of decussation, will cause paralysis of the left side; and if the converse be the case, as to injury done, a paralysis of the right side will result. A partial paralysis will be produced on both sides if an injury is perpetrated at that portion where the decussation is taking place, but if applied below this the result is ascertained to be only on the same side as injury. There is a crossed action in the sensitive fibres also, as shown by Brown-Séquard, and this not limited to any one certain part, but is found to exist throughout the entire length of the spinal cord, as is shown when one-half of the cord is divided, sensation remains on the same side, but is destroyed on the opposite; and he has also shown that very shortly after a posterior nerve enters the horn of its own side, some of the filaments pass across to the opposite side, and, if the posterior columns be alone divided, sensibility is not destroyed in the nerves behind the seat of injury, but only in those entering the cord where the section is made.

From what has been said heretofore, concerning the directions of the different nerve currents, we might naturally expect that in an animal recently killed the irritability would disappear in the same succession as do currents pass, which is a fact as shown by

Longet,\* and that each nerve filament acts independently of the rest throughout its entire length; indeed, if it were not for this, with regard to the nerves of sensation in particular, a sensation produced at one point would appear diffused and indefinite. And as for the motor nerves, if a filament in a bundle be separately touched by the poles of a battery, that portion of the muscle alone will contract to which it is finally distributed. And, again, we have "associated sensations" and "associated movements." As example of the former, I should judge the feeling of a pretty girl's patella, or of the integumentary covering over the gastrocnemius (not professionally), would excite in one an "associated sensation;" and of the latter, a nausea produced by witnessing a half-etherized patient vomit a tough indigested mass, which a white neck-tied assistant (such as is at the N. Y. H. M. C. S. cliniques) is compelled to follow Tom Horner's mode of sticking in his thumb, etc., etc., in order to free the poor patient, and also that he might fully realize in belief what Tom did.

We have thus far studied the spinal cord in its connection as a great nerve, containing both sensibility and motility, and being intimately connected with the brain above.

But it is also an independent nerve-centre, as is very often illustrated, and to good advantage in many instances; say, for example, a fall, how very natural it is for us to throw out our arms for protection, or when anything which gives pain comes in contact with a hand or leg, how quickly we withdraw the part. And this is not because we are then aware of the danger, as is illustrated in many instances where death is narrowly escaped by some adroit movement, how after all danger is over, the person is much agitated. In either of the above instances, we have what is termed a reflex action, that is to say a sensation received as the periphery passes to the cord, and a motive impulse originating in that organ is immediately reflected back again to the muscle or muscles, and the result is a contraction.

"There may accompany this no exercise of will, consciousness, or judgment, and this action will go on just the same when the brain and sympathetic systems are removed."† By certain diseases

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\* Physiologie, vol. ii, part 2, p. 52.

† Dalton.

and by certain drugs, the irritability of the spinal cord may be much exaggerated. Strychnia has such a tendency if given in small doses, and if administered in large doses to produce paralysis of the sensitive fibres only. Woorara will paralyze motor filaments only. Sulphocyanide of potassium will cause complete paralysis by acting directly upon the muscular tissue.

#### THE DISEASE.

*Nomenclature.*—*Tabes dorsualis* (Romberg); consumption of the spinal cord; *ataxie locomotrice progressive* (Duchenne); gray degeneration of the posterior columns of the spinal cord (Leyden); *progressive ataxia*, *locomotor ataxia*, *sclerosis of the posterior columns of the spinal cord*, *sclerosis medullæ spinalis*, *motor asynergia*.

*Definition.*—Posterior spinal sclerosis is a hardening of the posterior gray cornua of the spinal cord, produced by an hypertrophy of the interfibrilla connective tissue (neuroglia). As a consequence nervous sensations traverse its mass at a much diminished speed, giving rise to abnormal sensations, numbness, and an inability to co-ordinate the movements, because of the compression of nerve-tissue.

*Symptomatology.*—In 1840, Romberg called the attention of the profession to a disease, which Duchenne in 1858 had more thoroughly investigated, and given a more distinct account of, and called by him (Duchenne) *ataxie locomotrice progressive*.

Since that date, however, owing to the advance in science, we are able to give the cause for the manifold set of symptoms, which they were not *then* able to do, although not that of the disease itself. And better still, we are slowly yet surely finding a way to cure it; and this is another of homœopathy's accomplishments.

I shall now hasten on to the enumeration of its many symptoms, and in order that I may get all in that are laid down in the books, I think it well to classify them according to the anatomical divisions exemplified in our homœopathic *Materia Medica*. Of course, this will require a deal of repetition as regards the stage of the disease, when such or such a symptom has been noticed to be most marked; but as the reader is by this time or at least should

be, well used to such symptomatic repetitions, I am sure it will be a sameness to him, and such an arrangement as no author yet has made. Commencing then with the mind, we find a despondency, and this particularly marked during the last stage. He loses confidence in himself, and will use extraordinary caution in walking.

The intellect and memory are usually unaffected; the general sensitiveness is however somewhat blunted, so that he don't appreciate his unfortunate condition. Towards the last his memory becomes very bad, and there is great despondency.

*Head.*—When the disease first manifests itself by brain symptoms, then we have attacks of vertigo lasting for shorter or longer intervals, epileptic fits, disturbances of vision, etc. Again, we may have headaches, either nervous or caused by stomach disorders; headache, sharp pains and shifting; or dull pains. In some instances there are constant ringing noises in the head.

*Eyes.*—The eye troubles are very common in this disease, and may appear among the first symptoms; as amaurosis from atrophy of the optic nerve, or of the disk. Ptosis from atrophy of the third pair of nerves, also from the same cause; dilatation of the pupil and strabismus divergens. We may in some instances have atrophy of the sixth pair alone, and hence will follow strabismus convergens. On another occasion there is only a dilatation of the pupil and a prominent glairy eye; this arises from excitation of the sympathetic nerve.

Diplopia and defective accommodation we will find at times. When the lesion is below the upper *dorsal region* of the cord, these eye troubles are not to be found; but rather locomotion is interfered with to a certain extent, and then the eyes play a most important part as regards the welfare of the patient, as will be shown hereafter.

In some instances where the nerves to the eye are affected during the early stage of the disease, we may have them (symptoms) wholly disappear as it (disease) advances, sometimes to return during a later stage, or may be to remain away altogether. When an ataxic patient is free from pain, you will generally find that the conjunctiva is very much injected as in conjunctivitis, and at times giving rise to a sort of chemosis; accompanying this there



is contraction of the pupil to a very small size, and in some instances this is so powerful that Bell. will not dilate it. When the pains again make their appearance, these symptoms are replaced by a dilated pupil, and cleared-up conjunctiva.

*Ears.*—Atrophy of the auditory nerve sometimes accompanies that of the other cerebral nerves, and very often there is deafness, most marked in the last stage.

*Face.*—The pains in the face are sometimes excruciating; they come quickly and disappear just as soon, or are of a boring, aching character, and are generally accompanied by pains in other parts of the body.

*Stomach and Bowels.*—On some occasions the disease is ushered in by disorders of these organs, when vomiting is a symptom, and either diarrhoea or constipation accompany it. These symptoms are at times most distressing, and are very often taken for those of dyspepsia; they are due to reflex sympathetic action, and are not present when the lesion is low down in the lumbar region.

*Rectum and Anus.*—In a dorso-lumbar lesion of the cord the sphincter is very often paralyzed, and the bowels are usually obstinately constipated, and rarely, at first, permitting involuntary discharges.

*Stool.*—In the majority of cases there is constipation, and this condition aggravates the case.

*Urinary Organs.*—We very often find paralysis of the bladder in patients in whom the lesion is low down in the dorsal region, hence later on in the disease there is continual dribbling of urine; but at first the bladder symptoms are involuntary discharges, at night in particular. The patient is required at all times to attend the call to urinate immediately, and many will wear a urinal during the day. It is Niemeyer's belief that this sudden desire to urinate arises from the patient's not perceiving the fulness of his bladder, and the desire does not come on until a few drops are pressed out into the urethra. At times there is complete retention of urine, in which case the catheter must be used in order to free the distended bladder.

*Sexual Organs.*—When the dorso-lumbar region is affected the patient is troubled with frequent nocturnal emissions, with or without erections, and generally, in the early stages, increased

sexual desire. These emissions sometimes number as high as eight or ten during a night; later on in the disease there is complete impotence. In the early stages, when the sexual desire is strong, there are recorded cases in which as many as ten connections have been indulged in during one night.

*Chest.*—In the later stages there is a sensation as though a cord were drawn tightly about the thorax and abdomen.

*Heart and Pulse.*—I have been unable, thus far, to find anything concerning the abnormal actions of this set of organs; but, from the fact that the sympathetic system is so influenced by this disease, I should think that during the paroxysms of pain we would have an increased heart's action from irritation of the sympathetic centres, and a full, hard, quick pulse, and on the other hand, during the interval between the painful paroxysms, a diminished heart's action from temporary paralysis of this set of nerves, permitting dilatation of capillaries, and hence a slow, soft, weak pulse; and, during this time, effusions into the joints and a general anasarcaous condition could develop, which is occasionally met with, and will be referred to hereafter.

*Neck and Back.*—We may have the first symptoms of ataxia developing themselves in any region of the back, but generally in that of the lumbar, beginning with a dull, heavy pain in the small of back, and this soon followed by sharp shooting pains in various directions, following the courses of nerves down the extremities or around the body, and which are very like neuralgic pains; or there may be a constricted feeling about the body, that most common symptom in acute myelitis.

*Lower Extremities.*—When the lesion exists in the dorso-lumbar region of the cord, as is usually the case, there are peculiar sensations in the feet given rise to, and many have expressed these "as though the toes were too large for the shoe," or, "that they were standing upon something soft and velvety," and again, there is a feeling of "pins" and "needles" sticking into the feet. Besides this peculiar numbness, it is noticed that sensations do not reach the brain from the periphery of the body as quickly as they did formerly; thus, Hammond\* cites the case of a lady who, if "a

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\* Hammond, Diseases of the Nervous System, p. 485.

pin be stuck into the calf of her leg it is not felt for fourteen seconds on the right side, and sixteen on the left."

These symptoms gradually increase in severity, till now we have the most marked characteristic sign of locomotor ataxia, "the inability to coördinate the muscles," and the result, an unsteady, and finally, an uncertain gait. On many occasions, however, before the motility is at all affected, the patient will find it utterly impossible to stand alone with his feet together, and eyes closed; so also will he experience difficulty in placing his feet upon small surfaces. The gait of an ataxic patient is a somewhat peculiar one; thus, in the act of walking he brings his leg forward with a jerk, and thrown out a little from the median line in the same act; then he plants his foot upon the ground in two movements, one for the heel, and by a second and flapping sound is signified that the sole has reached its destination. In the act of standing he is noticed also to have his feet spread apart; the reason for which is obvious to you. And when either walking or standing our patient is obliged to keep his eyes fixed either upon his feet, the ground a short distance in front of them, or an object near by. They are compelled to use the eyes under these circumstances in order that they may know the position of their feet; the tactile and muscular sensibilities are so much diminished in the extremities, that the original way of knowing this is lost.

In a later stage of the disease he is unable to go forward, even with his eyesight to assist. There is no paralysis, until an advanced period in its progress, as is proven by the power such a person can exert of keeping the leg flexed against a force to straighten it, or, too, the carrying a weight about upon his back. Although the strength is retained to a great degree, yet they are able to exert themselves for short periods of time only, and then they become exhausted. Towards the very last there is a numbness of the feet and legs, arms and hands, in fact, the whole surface of the body; the muscles become atrophied; bedsores appear; there is anasarca, and oftentimes inflammation of the joints; these latter, though, are of rare occurrence, and accompanying them there is no fever, redness, nor pain; it is simply an accumulation of fluid in the synovial cavity, and arises from defective nutrition. These last symptoms, when present, make their appearance during

the interval between the painful paroxysms, much as does the hyperæmic condition of the capillaries of the conjunctiva, and is due most probably to the same cause as are those of the eye—a temporary paralysis of the “vasomotor nerves.” The extremities feel very weak, long before the disease could with a certainty be diagnosed ataxy; he finds that he can’t walk as long distances as usual without becoming very much exhausted; and towards the end walking is altogether an impossibility. Extremities feel weak and tired all the while. He wants to remain quiet all the while.

*Upper Extremities.*—When that portion of the spinal cord is affected on a level with the origin of nerves going to form the brachial plexus, then the arms are the seat of just such sensations as we find in the legs, when a dorso-lumbar lesion exists. The same benumbed sensations, prickings, and finally the loss of muscular coördination, when the fingers will be restrained in their actions, and this especially noticed when trying to pick up a small object, which will require some nicety in manipulation in order to grasp it. The patient is now unable to write or even to draw a straight line, as could he when the lesion was below this point on the cord. He is unable to carry anything to his mouth with his eyes closed, and if you tell him to shut his eyes, and touch some part of his face, he will most likely come one or two inches from the part named. As in the legs, just so here, there is no paralysis, and though the patient can lift a heavy weight, yet he cannot stand continued exertion. He is now unable to distinguish between weights, differing in some instances many pounds. There is a numbness of the hands and arms in the later stages. He is only able to perform willed movements when his eyes are kept fixed upon his hands; just so soon as they are withdrawn from them, the hands fall, or he in some way fails. Sharp, darting, lightning-like pains up the arm and up the neck.

*General.*—Many times the first symptoms complained of are those of anæsthesia, giving rise to abnormal sensations, etc. The patient is in many instances unable to distinguish between hot and cold objects when brought in contact with his skin; such cases are though somewhat rare. There is generally an exaltation of the reflex power, and under these circumstances so simple a thing as the touch of the bedclothes, or rubbing one leg against

the other will suffice to bring on convulsive movements ; and such contractions not due to reflex actions are seldom met with.

The constriction around the body, which is, as I have before mentioned, so common a symptom in acute myelitis, is rarely absent in posterior spinal sclerosis.

The pains are at times distressing ; sharp and sudden, or dull, boring, gnawing, and deepseated. As a rule, during a few days these pains are entirely absent ; but soon they return again, and remain for a time, keeping the poor patient in agony the while. Pains are aggravated by cold and damp, constipation, fatigue, or any kind of debauchery ; and relief is obtained by keeping quiet. Pains usually come on and go off again with the rapidity of lightning. They generally last from a few seconds to a minute, recurring usually ten, fifteen, or twenty times an hour during the paroxysms. Pain is the most constant premonitory symptom of the disease ; yet Trousseau\* relates a case of well-marked ataxy, in a man who had never had any pain. If present, the pains are generally worse at night. The advance of the disease up the cord causes an increase in the severity of symptoms previously noticed, and of course new ones make their appearance in proportion to the magnitude of the lesion. The course of the disease uncomplicated is a tedious one, running on for years and years, and the patient becomes worse so gradually that he can realize it only by comparing his health at the present time, with what it was months or years ago. This, I should state is the rule, the exceptions being a comparatively few cases reported, in which the disease had advanced with such rapidity that in four or five months the patient was rendered helpless.

If our patient has not died from some intercurrent disease, most frequently the case, as pneumonia, dysentery, phthisis, or cystitis, then we will find him towards the last living a most miserable existence ; unable to walk, feel, or scarcely to move upon his bed ; oftentimes deaf and blind, or nearly so ; urine constantly flowing from the paralyzed bladder, and together with the involuntary fecal discharges, keep the parts moist upon which he lies, until bedsores appear, and the exhausting influence of these last, on a

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\* Trousseau's Clinical Lectures, p. 147.

system now so weakened and emaciated in every part, is enough of itself to cause death, and in due time the Almighty's prescription (a pain-killer) is made.

*Cause.*—The cause of this disease is as yet obscure ; to be sure, age, sex, and hereditary predisposition have a great deal to do with the production of it. Thus, men are much more liable to it than women, as shown by statistics in one hundred and seventy-seven cases, tabulated by Dr. Brown-Séguard ; one hundred and twenty-eight occurred in males, and forty-nine in females. It is a disease of middle age, generally occurring between the 20th and 50th years.

Hammond cites a case of a man eighty years old ; and indeed the only cases under twenty which seem to have been reported are three given by Dr. Friedreich, in which the respective ages were eighteen, sixteen, and fifteen years. Sexual excess is sometimes a cause, and the physiologist Johann Müller has said, that this is its only cause ; but his statement has long ere this been proven untrue. Indeed, the name which Romberg applied to it, "Tabes Dorsualis," signifies a past abuse of the organs, and so we can see what a decided opinion men of that day held with regard to the origin of this disease. Facts have produced a variance of opinion on the subject, and yet no positive proof has been offered up to this time.

Syphilis, rheumatism, gout, struma, age, sex, hereditary predisposition, prolonged exposure to cold, drunkenness, over-fatigue, masturbation especially, mental anxiety acting for a long time on a weak frame, gonorrhœa, sexual excess, etc.; and indeed some have gone so far as to ascribe their disease to suppressed perspiration of the feet. But what does all this amount to? Nothing, in the light of science. It is very often noticed in persons who, after becoming wearied and heated by severe marches or other exertion, have laid upon the damp ground to rest. The predisposition in families to nervous affections holds by far the strongest ground of origin; and Dr. Radcliffe mentions a family in which one brother is epileptic, another brother a hypochondriac, and two sisters suffer from different forms of paralysis. Dr. Carré instances a family in which eighteen of its members became ataxic

in turn, namely, the "grandmother, mother, eight relations of the latter, seven children, and one cousin."

Says Hammond:\* "Of all the cases I have seen, I have only been able to assign inordinate sexual indulgence as the cause in seven; injuries were apparently the cause in four; standing in a constrained position in three; undue mental anxiety in two; excessive use of alcoholic liquors in three; a syphilitic taint in three; and in the remainder there was nothing that could be assigned as an exciting cause."

*Pathology.*—Investigations into the morbid anatomy of posterior spinal sclerosis, show it to be a result of two entirely different processes: the first a simple and non-inflammatory condition; and the second an indurative and inflammatory metamorphosis. The first of these is the most common form, and the posterior columns are the ones more generally attacked by it. In examining a cord thus affected, post-mortem, the appearance of the diseased columns is of a reddish-gray color, owing to some change in the neuroglia.

The degenerative process usually proceeds upwards from the "cauda equina," and is developed from the posterior median line and circumference towards the centre and lateral margins of the cord. The roots of the posterior spinal nerves are affected, and in a way which will be hereafter referred to. When on the histology of this organ, I treated very fully of the inter-fibrillar connective tissue (neuroglia), and of its office in this position, that of supporting the nerve-mass by binding together the nerve-fibres, and thus acting the part of a cement. Now, it is just this tissue which is involved in spinal sclerosis, and is hypertrophied. If a portion of the web which it forms be teased out with needles, it will be seen to separate into small globular masses, each one of which contains a nucleus and a large number of radiating branches. These correspond to connective-tissue cells, and are most numerous at the circumference of the cord, although smaller in size than those positioned nearer to the centre.

At the periphery, they are found to be in direct connection with the deep layer of the pia mater; and as the disease starts

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\* Hammond, Diseases of the Nervous System, p. 496.

from the circumference as a base, and involves the analogous fibrous septa, is it not likely that it takes origin in the deep surrounding membrane of the cord? And now let us ascertain the condition of nerve-roots in a part so affected by a continual proliferation of connective-tissue corpuscles, which growing network, according to Frommann, forces its way into the spaces assigned to the nerve-tubes, and in time causes their destruction. And Rindfleisch\* says, as regards the finer details of the process, "At an early stage the neurilemma becomes fused with the advancing connective tissue, while the medullary sheath breaks up, and the axis cylinder alone continues to resist." These last remain intact for a long time generally, but finally they too are destroyed.

The changes in the bloodvessels are by no means constant, yet their outer coats may take on an increased growth in thickness the same as does the connective tissue, and at points on the adventitious tunic may in some instances be found fatty and pigimentary accumulations from degeneration. Corpora amylacea are very common, and found mainly in those positions where the disease has existed for the longest time. Rokitsky was of the opinion that they resulted from disintegrated medullary sheaths, but Rindfleisch† considers them degenerated cells.

The second variety of "gray degeneration," inflammatory, is the much more rapid process of the two, and spreads over a broader field of nervous matter. The coats of the vessels are thickened, and are in a condition of chronic inflammation. The connective-tissue cells are more proliferous, the same results obtaining from its hypertrophy as we have already learned, do in that of the "simple" form.

*Prognosis.*—According to most authors this is very unfavorable, although by close adherence to hygienic laws, much alleviation of suffering can be obtained, and in many instances the disease is made to progress with much less rapidity than usual. Some few exceptional cases have been reported cured. Strange to say the disease frequently remains stationary for variable periods of time. Dr. Radcliffe reports a case which appeared to stand still, as it were, for at least fourteen years.

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\* Rindfleisch, *Pathological Histology*, p. 348.

† *Ibid.*, p. 349.



The prognosis of locomotor ataxia which I have just finished writing, is that which I have obtained from allopathic authors solely; and after giving you a fac-simile of the treatment from which their conclusions are drawn, I shall pass over to the treatment adopted for its relief and cure, by another school of medicine, "the commanders in chief of therapeutics," and ascertain from their thus far limited experience in its treatment the result sanctioned.

*Treatment, Allopathic.*—Trousseau\* says: "If as yet, however, we do not possess any means for curing this affection, or even for arresting its progress, we can still in certain cases modify and moderate some of its symptoms, and thus procure some alleviation. Above all we are to avoid remedies which have proved not only useless but dangerous. Thus we should reject bloodletting absolutely, whether general or local; purgatives also, which when often repeated, act in the same way; revulsives, cauteries, moxas, or setons, which by causing irritation of the skin, may bring on the special pains of ataxy in the spots where they are applied."

The progress of the disease has been apparently checked by the internal administration of Argent. nit., Professor Wunderlich's prescription.

Drs. Charcot and Vulpian report very favorable results from the use of this remedy; but unfortunately, says Trousseau,† "Cases may be opposed to these, in which the silver nitrate failed completely."

Dr. Radcliffe‡ recommends a treatment in which figure some preparations of Phos., with or without cod-liver oil or Ars., or mercurio-chloride. He says also: "I should endeavor to act upon general principles, meeting as well as I could any special indications, as syphilis, or gout, or rheumatism, or struma."

It is well that the patient use crutches as much as possible, for the purpose of preventing too much strain on a part which is diseased, and consequently requires as much rest as possible.

For the relief of pain Dr. Radcliffe advises a liberal use of stimulants rather than sedatives; regular shampooing, faradiza-

\* Trousseau's Clinical Medicine, p. 180.

† Ibid., p. 181.

‡ Radcliffe, Reynolds's System of Medicine, p. 352.

tion, and the use of positive statical electricity ; flagellation used methodically, and in moderation, diminishes pain in some cases.

Trousseau alternates Bell. and spirits of turpentine, ten or fifteen days successively, with a gradual increase of dose. Sulphur and water baths are many times indicated as general modifiers. And by all the means possible, support the patient's strength. Says Tanner\* in reference to treatment, "I cannot help feeling that we are better discharging our duty, when consulted in these cases, by recommending warm clothing, a nutritious diet, together with rest of those limbs which are gradually becoming incapacitated for all movement, than by leading the sufferer to believe, that medicines, mineral waters and baths, methodical flagellation, blisters and galvanism, have virtues which in reality they do not possess."

Hammond† advises Ergot in large doses in the early stages of the disease, and the Bromide of Potassium may be combined with it, in doses of from thirty grains to a drachm three times a day. Again he says, the pain in the back or around the abdominal or thoracic regions, are best combated with codeines in doses of from half a grain to one or two grains, according to circumstances. Further on he advises the use of Phos. ac., Phos., and Baric Chloride.

*Treatment, Homœopathic.*—By the kindness of Prof. Lilienthal, I am permitted to illustrate this mode of treatment to its best advantage, by citing a case which occurred to him of a man aged 32 years, married and having two children ; a lithographer by occupation, who spoiled his eyesight by very fine work, and especially at night. He first noticed that his sight was failing, and that there was a blur before the eyes about nine months before coming under Prof. Lilienthal's notice. He was soon unable to continue at his fine work, and changed to something coarser, but now his hands became very tired even when doing but little, and he was unable to manage them skilfully ; this tired sensation was noticed first of all in the hands.

About this time he took a vacation and went to Utica, and while there underwent "electrical treatment" as he (the patient)

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\* Tanner's Practice of Medicine, p. 444.

† Hammond, D. N. S., p. 515.

expressed it, which aggravated every symptom, and the doctor who treated him sent him home and gave but little hope of a cure. He was then seen by one of the best homœopaths in the city, who also gave but little encouragement. Finally he came under the care of Prof. Lilienthal, and was now very much affected. When first seen by him (the Professor), he was sitting in a chair and desired to remain very still; on attempting to walk he pressed his hand upon his loin, and would slide his feet along the ground as in a sort of parietic condition, soon becoming exhausted. His bowels were costive. He could not read a line without becoming much exhausted. There was a played-out feeling of the whole body. No will or power at all. Hydrogenoid constitution marked; a chilliness down the back, in immediate region of the spine, during damp weather. Parietic condition of the lower extremities. Dull and heavy headache deep in the occiput. Bodily exhaustion with mental clearness. Sleeplessness at night from exhausted feelings. As soon as he falls asleep, priapismus and seminal emissions, with or without sensual dreams. During coition the semen is ejaculated too quickly. There are no heart nor lung symptoms. After the failure of *Nux vom.*, high and low, Alumina low, so that he could taste it; and Phos., to cure or at least to alleviate the case. Picric acid was suggested by Dr. Jones, and Picric acid was given, with almost immediate beneficial results; and now after its continual administration for three months, the patient is able to walk at least a mile and a half. Can read a page without becoming tired. Seminal emissions entirely gone, and his virility is not yet returned. Picric acid was given in the 6th, 30th, and 200th potencies in alternation at times, but the best results were obtained from it in the 6th.

Now to show how well Picric acid is adapted to the case just cited, I shall record some of the main drug symptoms obtained from its proving, which are to be found in the *New York Journal of Homœopathy*, of June and July last (1874).

*Mental.*—Can't collect thoughts. Great indifference, lack of will power to undertake anything. Loss of memory. Aversion to talk. Takes no interest in surrounding things.

*Head.*—Terrible pains in the neck and occipital region, extending forward to the supraorbital notch, and then down into the

eyes; dilated pupils; everything looks blurred; can see to read only at one point, five inches from eye. Heavy pain in occipital region extending down the neck and spine. Dull heavy frontal headache, with weakness in small of back and limbs. Severe sharp intermitting pain in left temple; with restless sleep till about midnight. Severe aching pain in the left supraorbital notch. Heavy dull feeling of head as if filled with blood. Dull steady frontal headache, with vertigo when rising and when walking. Full pressing sensation in head, from within outward, as if the head would fly apart; great aggravation by motion and by study. Frontal headache from within outwards, with sensation as if frontal bones would split open; aggravated from turning head, moving eyes, or the least motion. Peculiar, dull continuous pain all over head; aggravated by motion, turning head, stooping; relieved by lateral pressure on head; forehead hot. Vertigo with nausea on least motion. Full heavy feeling in vertex, aggravated by stooping, and moving eyes. Throbbing pain in left eye and left side of occiput. Throbbing headache, commencing in eyeball and forehead (left side), and extending backwards to the occipital region; better from keeping quiet; worse from motion, and greatly aggravated by going upstairs. Head symptoms generally relieved by bandaging head tightly.

*Eyes.*—Everything seems blurred, as if looking through a fog or thick veil, with burning, throbbing pains, and dilated pupils, conjunctivitis, and lachrymation. Great heaviness of lids; cannot keep them open; pupils dilated; eyes feel worse on moving them; turning them upwards. Heavy pressing, smarting, and burning pains in the eyeball; relieved by pressure; heaviness of lids; gaslight hurts the eye. Severe, sharp shooting pain in centre of eye, extending back to the occipital region; pain seemed to follow course of the optic nerve. Eyeballs sore to touch; photophobia; lids sore, and slightly swollen. Sensation as if sand was in the eyes, with smarting pain and acrid tears; relieved by cold water, and walking in the open air.

*Nose.*—Bleeding of nose, with heat and congestion of head. Nose filled with mucus; can breathe only through mouth; relieved by going into the open air.

*Face.*—Sore aching pain in the infraorbital region. Pain over

right eye in supraorbital region, sharp and vibrating, stopping a moment or so, and then beginning again (lasted half an hour).

*Mouth.*—Throat feels raw, scraped.

*Throat* stiff and hot, as if burnt; throat red; collection of thick white mucus on tonsils; great difficulty in swallowing, with a sensation as if throat would split open. Saliva white, frothy, and stringy; hangs in long strings to the floor. Raw feeling in the left side of throat, extending from behind forward to the sub-maxillary gland; worse when swallowing. Rough, raw, scraped sensation in throat (left side). Bad taste in mouth of gas, and waterbrash. Sore throat.

*Stomach and Abdomen.*—Great thirst for cold  $H_2O$ , which is taken in large quantities without relief. Nausea; bitter eructations after breakfast; sensation as if something was in the lower part of the œsophagus. 12 M., no appetite; disgust for food. No appetite; bitter taste in mouth; taste sour; bad taste in mouth. Crawling, stinging pain in abdomen; rumbling pain in abdomen; dull rumbling, colic-like pains in abdomen; rumbling in abdomen with crampy pains and flatus; stitching through right side, in region of liver; seems to be in the muscles; sour eructations of gas and ingesta.

*Stool.*—Stools light-colored, and passed with much burning and smarting in the anus, continuing an hour afterwards. Diarrhœic stool, with burning and smarting at anus; soft stool, with much tenesmus.

*Urinary Organs.*—Urine profuse; color normal; very hot when passed; accompanied by burning pain in the urethra, which feels as if burnt. Urine passed with burning, scalding pain. Urine increased; light-colored; specific gravity 10.23, in one whose normal specific gravity is 10.20. Urine increased, and of a light amber color.

*Sexual Organs.*—Great sexual desire, with emissions. Sexual desire increased; hard erections at night; lewd dreams, with emissions; emissions every other night. Awoke with emission and very firm erection, which lasted for some time after emission. Erections awful; violent, strong, and long-lasting, which I thought would surely rupture the penis, followed by profuse seminal emissions. Violent erections all night; could not sleep

for them ; had to get up, walk around, and bathe the parts in cold H<sub>2</sub>O. Erections with severe pain in the left testicle, as if bruised, extending up the cord as far as the external abdominal ring.

*Chest.*—Muscles on left side, over the tenth and eleventh ribs commenced to throb and jerk, which lasted for three or four hours. Twitching of muscles over eighth and ninth ribs (left side). Dull stunning pain in chest, with twitching in the throat. Chest feels tight as if encircled by a band.

*Back and Neck.*—Severe, heavy, dragging pains in the region of the kidneys and back of neck, extending upwards and downwards, till they meet between the scapulæ. Twitching of muscles on back of the left hip.

*Upper Extremities.*—Great heaviness in the arms and legs, especially the legs, on exertion. Shooting pain in the left arm, at elbow, extending down the arm. Coldness of hands and feet ; lame sensation in both shoulders. Twitching of the lower portion of the biceps of left arm, lasting half an hour.

*Lower Extremities.*—Feeling of heaviness in, and great weakness. Weakness in region of the hips. Legs are heavy, like lead ; lifted from the floor with difficulty ; great coldness of the feet. Heaviness of the hips and legs, lasting all day. Pain in the left anterior portion of the thigh ; could hardly flex and extend the legs ; lasting for fifteen minutes. Crawling pain in the sole of the foot, and under the patella. Numbness in the left foot. Pricking sensations, as from needles, in the legs and feet. Feet feel as if frost-bitten. Calves of both legs lame and sore. Severe pain in the back portion of left leg, extending to the sole of foot, with sensation as if foot would go to sleep ; relieved by motion and open air. Pains in calves of legs, lasting all night. Extensor muscles of legs feel numb. Severe pain in the left inguinal region on walking, and aggravated by going upstairs.

*Fever.*—Fever ; great chilliness ; cannot get warm ; followed by cold clammy sweat ; chilliness preponderates.

*Sleep and Dreams.*—Sleep restless up to midnight. Sleep sound, but unrefreshing. Awoke at 6 A.M., with tired and heavy sensation in small of back and limbs ; sleep restless and tossing about until 12 P.M. Sleeplessness the whole night.

*Skin.*—Small, painful, reddish elevations around mouth, and on

other parts of face, which resemble furuncles, and when opened they exude a thin clear serum, which soon dries into a transparent scab; they then become pustular and very painful, and contain a thick opaque pus, like condensed milk. Small reddish elevations on face, which become pustular, and are accompanied by burning, stinging pains, when touched.

*General Conditions.*—Throbbing and jerking of muscles in the different parts of the body with severe chills, and great pain between the hips of a dull, heavy, dragging character, which descend slowly to the left leg. All the pains are relieved by sitting still, and aggravated by the least motion. Profuse, cold, clammy sweat, with great chilliness. Tired, weak sensation when rising from bed. Darting pains in different parts of the body all day long, extending into the bones. Extremities cold. Aggravation between 11 A.M. and 2 P.M. Pulse fifty; weak and small. Vertigo on going upstairs. Cold extremities, decidedly marked throughout the whole proving.

Besides Picric acid, which will most likely prove a remedy of first importance, in the treatment of posterior spinal sclerosis, I append the following few, which were given me by Professor T. F. Allen, and which were used homœopathically in years gone by with variable results: Alumina, Arg. nit., China, Sulph., Rhus, Kalmia.

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ON A NEW REMEDY; THE YERBA DEL PERRO.—At the meeting of the Biological Society of Paris on December 5th, M. Rabuteau presented a new Mexican plant of a poisonous character, the *Yerba del Perro*, which had been sent to him by M. Victor Salet. He had tried its therapeutic properties on dogs, and found that they raced about, were much disturbed, had convulsions, and died in the short space of ten minutes.

The extract is very deliquescent. Eighty centigrammes (twelve grains) injected into the veins of a medium-sized dog produced the following effects. There was nothing remarkable until an hour had passed; at the end of that time the dog barked a great deal, foamed very much at the mouth, and fell down in convulsions. These symptoms lasted during half an hour, when the animal died. This new plant produces symptoms analogous to strychnia, but the convulsions produced are of a different character. In the dog which was first experimented on, the pupils were enormously dilated; the brain was congested, but not the spinal marrow; the lungs were in a normal state. This *Yerba del Perro* (dog-grass) belongs to the family of Compositæ; it has a woolly stem, and seems to be highly poisonous.—*London Med. Record, December 23d, 1874.*

**ARTICLE VI.—Physiological Psychology.**

BY C. G. RAUE, M.D.

## § 70. SENSIBILITY AND IRRITABILITY.

THERE are usually assigned to man five senses: sight, hearing, smell, taste, and feeling. They are represented by bodily organs: the eyes, the ears, the nose, the tongue, and the innumerable fine sentient nerves which are distributed all over and throughout the body. Even a superficial investigation, however, of the reaction of these nerves, through the so-called "common or general sense of feeling," makes it apparent that they respond to stimuli of widely diverse natures. What we discern, for example, by the points of our fingers and toes, the lips, and tip of the tongue (by touch) differs widely from the sensations we receive by the skin in general, or by the action of our muscles, or by the operation of the lungs, the stomach, and other organs. This we shall have to inquire further on. Here it may merely be stated, in general, that where sensations originate we find bodily organs of peculiar structure, which are adapted to the reception of certain kinds of stimuli. According to the nature of the stimuli, the recipient organs vary in structure; all, however, consist in a central and a peripheral apparatus, which are joined by conducting cords of peculiar matter, called *nerves*. These nerves have this peculiarity, that in a normal bodily condition they convey impressions only from the periphery to the centre, hence their name *afferent* nerves, in contradistinction from others which carry central impressions to the periphery, and which, therefore, are called *efferent* nerves. We shall speak of the latter more fully in some future paragraph. The afferent nerves, with their peculiarly constructed peripheral and central arrangements, form the bodily basis of the senses.

In glancing over the various classes of living organisms, we do not find any signs of a nervous structure in the whole class of beings designated by the name of *Protozoa*. They consist of a perfectly homogeneous mucous substance. Nevertheless, they do appear to possess a kind of sensibility to external stimuli, as, according to Trembley's observations, the *Hydra* moves towards the light, whilst, according to Cavolini, the *Gorgonia* and *Sertularia*



shun the light. But we may descend still lower in the scale of creation, where nervous structure is entirely out of question, to the vegetable kingdom, and find even here clear signs of reaction against external stimuli. Of the very numerous instances of this kind, I need single out only the generally known plants, the *Mimosa pudica* and *Dionæa muscipula* (Venus's fly-trap). In these cases reaction against stimuli does not at all depend upon a nervous structure. And the same independence manifests itself in the irritability of the muscles when their nerves are severed; in the growth of the ovule, and its subsequent development after fecundation until the period when the first traces of nerves appear; in the growth of such parts of the body in which no nerves as yet have been discovered, for example, the cartilages, the lenses, and vitreous humors; in the respiration of the red blood-corpuscles and the motion of the white corpuscles outside of the body. Life is inherent in the *cell* (Virchow); and does not the whole nervous structure consist likewise of cells?

Still there must be a difference between the irritability of cells possessed of and those devoid of nervous elements. It might, indeed, be impossible to draw a line of distinction between the two when they just commence to appear as separate organizations, as in the case of the lowest classes of animal organisms. But the line of demarcation will become sufficiently plain if we follow their development to its more advanced stages. Now these latter stages show unmistakably an entirely new form of development, and one invariably associated with the nervous organization, the development of *consciousness*. However perfect a cell may be, or however perfect its combination with other cells to form a complex organism, as, for example, in plants, it nowhere shows any signs of consciousness. Not until nervous structure appears is the development of consciousness discernible; but only the advanced stages of nervous development show definitely realized the essential tendency of the primary or elementary nerve-structure. What at first is indiscernible gradually unfolds itself, and thus we come, by retrograde reasoning, to the conclusion that whatever peculiar property belongs to an advanced nervous structure, must belong equally in kind, though more faintly in degree, to the nerve-element in its nascency. If we thus hold nervous structure

apart from all other cell-structure, we shall be able to distinguish between its sensibility and the irritability of all other living cells. In nerve sensibility there is a capacity for development into *consciousness*, and this capacity is constantly struggling to realize itself, while the irritability of all other living cells exhausts itself in a reaction to maintain life, that is, in the preservation and upbuilding of nutrition and form. We see this clearly manifested not only in those plants which consist of a single cell, especially the *Algæ*, living unattached in the water and in the spores of plants, but also in the various cells of the animal organism. The automatic properties of the latter have been described by Virchow, in his *Cellular Pathology*, p. 355, 4th German edition, as consisting in the following characteristics: They change their form continually by projecting and withdrawing single parts of their substance, which is seen with special clearness in the young cells of the cartilage and of the *Enchondroma*; they have molecular motion within themselves in their protoplasma, as observed by Reinhardt in *pus-corpuscles*, and by Remak in *mucus-corpuscles*; they form vacuoles in their protoplasma; they cause separations of single parts from the main body, and swallow up and incorporate with great voracity other cells and foreign substances, as has been observed by Preyer and others. Preyer saw colorless blood-corpuscles twist around and envelop red ones, and press them into their interior, and others observed that colorless blood-corpuscles as well as other cells incorporate indigo, carmine, cinnabar in much the same way as is known of *Infusoria*, who possess neither mouth, stomach, nor outlet, but take up or suck in foreign substances, and throw them off more or less changed at any point of their surface. Now all these processes have been observed to go on in the living cell, entirely independent of any nervous influence; they are its essential life properties, its irritability or innate nutritive and formative power, in consequence of which the cell becomes a living organism, is life in its incipient stage, vegetable or animal. By it the cell multiplies and aggregates, and gives rise to the growth of the different organisms.

#### § 71. THE NERVOUS SYSTEM.

The nerve-cell too, no doubt, considered merely as a living cell,

has the same inherent capability and tendency towards nutritive and formative processes, otherwise its growth would be impossible; but superadded to this is another capacity, higher and generically different, the capacity for development into consciousness. In its primary impulse, this manifests itself in a gradual development of the special senses, that is, as a sensibility for special external impressions. Its first indications are, indeed, very faint. Not until we arrive at the class of Radiata do we find traces of a nervous system. The *Acalephæ* present a nervous ring around the entrance of the stomach or mouth, as the first phase in the development of nervous matter; and this arrangement is persistently repeated in the various species of this genus; even in the *Mollusca* and *Articulata* this œsophageal or oral circle is one of the most essential features of nervous structure. From it gradually more and more nervous cords are distributed to other portions of the body, and as the functions of these organisms become further differentiated, we find several centres of nerve ganglia make their appearance.

Thus in the higher *Mollusca* the oral or œsophageal nervous centre is divided into an upper and lower centre of ganglia. The upper, or *cephalic*, gives off nerves to the labial and olfactory tentacula, to the eyes, and to the muscular apparatus of the mouth; the lower, or *pedal*, sends nerves to the foot and to the organs of hearing. A third centre, the *parieto-splanchnic*, is usually situated on the posterior part of the body, and distributes its nerves to the muscular and sensitive parietes of the body, to the shell muscle or muscles, to the branchial apparatus, and to the heart and large vessels. All these different centres are connected by commissural bands.

“Besides the foregoing ganglia and nerves we find, in many of the *Gasteropoda*, a separate system connected with the complicated apparatus of manducation and deglutition. This set of nerves and ganglia may be called, from its distribution, the *stomato-gastric* system. A distinct *visceral* or sympathetic system of nerves, consisting of a multitude of minute ganglia and of a network of filaments, dispersed through the various parts of the apparatus of organic life, and communicating with the stomato-gastric system, has been clearly made out (by Mr. Hancock and Dr. Em-

bleton, in *Philos. Transact.*, 1852, and others) among the nudibranchiate Gastropods, and probably exists elsewhere." (Carpenter, *Comparative Physiology*, p. 647.)

In the Articulata, except in their lowest forms, the Vermiform tribes, we find a longitudinal gangliated cord, which corresponds to the spinal cord of the Vertebrata, with this difference, that instead of lying beneath the *dorsal* or upper surface, as in the Vertebrata, it occupies the *ventral* or inferior surface of their bodies. In its function it corresponds precisely with that of the spinal cord of the Vertebrata.

But "there is no distinct trace, in Articulates generally, of anything that can be fairly considered homologous with the cerebrum or with the cerebellum of Vertebrates; the first subœsophageal ganglion (cephalic ganglion), which has been likened to the latter, being really homologous (as the distribution of its nerves abundantly proves) with the medulla oblongata." (Carpenter, *Comparative Physiology*, p. 656.)

With the *Vertebrata* the arrangement of the nervous system takes another turn. The longitudinal gangliated cord now occupies the *dorsal* portion of the body, and its cephalic ganglia become an immediate continuation of it; all lie *above* the alimentary canal, and form a continuous mass of nervous matter—the *cranio-spinal axis*, which consists of the medulla spinalis, the medulla oblongata, and the chain of sensory ganglia. The œsophageal ring, which was the most characteristic feature of the previous classes, thus disappears.

In the lowest class of these new organizations, the *Amphioxus*, there is no trace of either a cerebrum or a cerebellum, and the *Cyclostome* fishes in general show no other advancement save a larger development of their sensory ganglia. In all the higher classes of fishes, however, and Vertebrata in general, we find an additional development of nervous matter, namely, the *cerebral* ganglia or hemispheres, which overtop the sensory ganglia, and the *cerebellar* hemispheres, which overlap the medulla oblongata. At first the sensory ganglia by far predominate over the only rudimentary beginnings of the cerebral hemispheres, until after many intermediate and successive developments from one type to the other, the cerebrum gains so much predominance in size, as

well as in complexity of structure, that the sensory ganglia become completely covered and hidden by it. The cerebellum likewise begins merely as a rudimentary thin layer of nervous matter on the median line, until by successive developments it gradually attains, in the higher classes, to considerable size and complexity of structure, consisting of a central portion and two lobes or hemispheres. (Compare Carpenter, *Comparative Physiology*, p. 663.)

This gradual development of the nervous system we find invariably associated not only with a gradual differentiation of tissues, organs, and functions in the animal economy, but also, and this is our most important consideration, with a more and more pronounced *conscious* activity or *intelligence*, a development which exists nowhere except in organisms endowed with nervous structure. This inseparable union again vindicates to nervous structure a potential capacity for development into consciousness.

#### § 72. THE SYMPATHETIC NERVOUS SYSTEM.

Conscious development we find least pronounced in the sympathetic system; yet that a certain degree of sensibility exists in its ganglia, we would be necessitated to infer (even if positive experiments had not proved it), from the observation of subjective sensations. We may count in this class the pleasurable feelings of bodily comfort, ease, convalescence, of health, vigor, and strength; the painful feelings of bodily oppression, anxiousness, restlessness, sickness, wretchedness, indisposition, heaviness, goneness, exhaustion, feverishness, etc.; the conative feelings of loathing, nausea, hunger, thirst, uneasiness, etc.; the positive bodily conations or desires for light and air, for all sorts of food and drinks, for evacuating the bowels or bladder, for sexual intercourse, for being carried about (in children), or moving about, or keeping still, or being lazy, etc. Many more such sensations might be added, and many are so obscure as to defy description. It is possible, however, that even some of those just enumerated do not belong to the sphere of the sympathetic system alone, as this system is blended throughout its extent with cerebro-spinal nerves. But to assign the separate origins of these lowest conscious developments neither internal perception nor anatomical

and physiological observation is competent. What anatomical and physiological researches have brought to light in regard to the sympathetic system is briefly as follows: "The sympathetic ganglia receive motor and sensory filaments from the cerebro-spinal nerves, as already stated, and some filaments of the sympathetic pass to the cerebro-spinal centres; the filaments of the sympathetic are connected at or near their termination with ganglionic cells, not only in the heart and uterus, but in the blood-vessels, lymphatics, the submucous and muscular layer of the entire alimentary canal, the salivary glands, liver, pancreas, larynx, trachea, pulmonary tissue, bladder, ureters, the entire generative apparatus, supra-renal capsules, thymus, lachrymal canals, ciliary muscle, and the iris." (Mayer.) "The sympathetic ganglia prove to be endowed with a certain degree of sensibility, which, however, is of a duller nature than that of the ordinary sensory nerves." (*Nervous System*, by Austin Flint, p. 424.)

Comparing these results of anatomical and physiological researches with the results of observation upon ourselves, we find that they closely correspond. The feelings or sensations which we have in these nerve-centres, and some of which have been enumerated above, are indeed for the most part of a very obscure and indefinite character; nevertheless, they may be roused sometimes to such intensity that they overshadow and thwart even the higher mental developments of sound judgment, etc. To exemplify this, I need refer only to hypochondriacs and hysterical women. In both cases there exist morbid disturbances of the sympathetic system which make themselves felt in its nerve-centres. These sensations first appear obscurely, but gradually, through their long continuance, attain an intensity which gives them actual preponderance over higher mental modifications. Such persons cannot otherwise than constantly talk of their misery, and, trying to discover its cause, frequently work themselves into the strangest and most absurd delusions.

In conformity with the view that a nerve-cell in general possesses a potentiality of conscious development, we must claim this power for the ganglia of the sympathetic system also; otherwise we would be at a loss where to locate the commencement of this power. And to deny to one tissue what we attribute to another of the same

kind, would surely not be admissible in point of logical reasoning. Therefore to the nerve-cells of the sympathetic system we must assign a certain capability for conscious development, however feeble; and as in the chain of animal organisms we find the simplest nerve-structure to be the starting-point of conscious development, so in the human organism we may consider the sympathetic system as the lowest base for the unfolding of the same process. And this view is further enforced by the similarity of the sympathetic system with the cerebro-spinal system. Both have their ganglionic centres, and both are connected at or near their peripheral terminations with ganglionic cells.

By the rami communicantes of filaments from the cerebro-spinal nerves the sympathetic system is in a certain communion with the spinal and cerebral centres. This explains the mutual though limited influence of one system upon the other, which is so clearly defined in cases where conscious developments of the sympathetic system become so intense as to obscure the consciousness of a higher plane, and where, on the other hand, mental emotions greatly influence the sympathetic system; as, for example, in the well-known instances where bashfulness blushes and fright blanches the cheeks, or where worry impedes and success increases digestion, etc.

The sensibility of the sympathetic system has never been considered as constituting anything like an independent sense; at least, its peculiar manifestations, which could not well be denied, have been thrown with other sensations into one common class, the so-called "common or general sense of feeling;" and this again has been crudely confused with the sense of touch; for all the world still speaks of five senses; sight, hearing, smell, taste, and feeling. But scores of convictions, sanctioned by centuries, have sunk into oblivion before a widening science, and we need not recoil from the doubt as dangerous, if even the sacred limitation of our senses to five should prove to be a product of incomplete observation. The latest researches of Mayer in Stricker's *Handbuche der Lehre von den Geweben*, Leipzig, 1871, p. 820, shows "that near the terminal filaments of the sympathetic, in most of the parts to which these fibres are distributed, there exist numerous ganglionic cells." Now, this is precisely a characteristic arrangement of all the other "special" senses, from which pecu-

liarity it might be supposed, "that it is not merely a simple physical stimulus which is transmitted through the afferent nerves to the central ganglia, and that the transmutation of the physical stimulus does not, as heretofore supposed, take place solely and entirely in the cranial centres, but commences at least in the terminal nerve-ganglia." (A. Horwicz's *Psychologische Analysen auf physiologischer Grundlage*, vi, p. 92.) This view of the sympathetic system as being the basis of an independent sense is strengthened also by psychological considerations. Hunger, thirst, sexual desire, and a great number of other sensations in the sympathetic system, are so distinctly *sui generis*, that only great laxity in discrimination can allow them to be classified with the "general sense of feeling." This is best illustrated by the provings of drugs upon the healthy body, which were introduced by Hahnemann, and have been continued by his followers into the finest observation of subjective symptoms thence arising; symptoms, by the way, which frequently are of the highest importance for the selection of the corresponding remedy in a given case of disease, but hidden from the self-styled "physiological" school by their crude ignorance of these finer shades of drug action. Still it must be admitted, as has been intimated, that a distinction between sensations of the sympathetic system and the general sense of feeling is not practicable in every given case, because these sensations are of the lowest order of conscious development, and the sympathetic nerves are so intimately interwoven with cerebro-spinal filaments, that anatomical researches have not been able as yet to trace them separately to their respective terminations. But this does not prove that they do not terminate separately, nor authorize us to conclude that the future will not be able to trace them anatomically also to their respective terminations.

### § 73. GENERAL SENSIBILITY, OR COMMON OR GENERAL SENSE OF FEELING.

The nerves through which the general sense of feeling finds expression are cranio-spinal nerves, and their action is said to differ from the other "special" sensory nerves in this,—that an excitation of them by stimuli causes *pain*. Now, this assumption rests wholly upon those crude observations which have been made



mainly by cutting, pinching, and cauterizing. The excitation of these nerves does *not* cause pain, unless it is an *over-excitation*, and an over-excitation will certainly, and in the case of every nerve, cause pain; in fact, over-excitation of a nerve is the very definition of pain. (§ 25.) Pain is always and everywhere the product of an over-excitation in any of the sensory nerves, and it cannot, therefore, be considered as a special function of the general sense of feeling. Besides, pain is very different in its character, according to the nature of the stimulus which causes the over-excitation, and the nature of the organs in which this over-excitation takes place. Fire burns, acrid things smart, a blow stuns, a fall causes bruised pain, and so on. Over-excitation in the nerves of mucous membranes are frequently characterized as a burning, affections of serous membranes, mostly as acute stitching, affections of bones as boring, affections of muscles as bruised, sore, lancinating sensations, and so on, while proper neuralgias assume all sorts of painful sensations, such as burning, stinging, throbbing, beating, etc. This being so, it is plain that "pain" is only a general expression to signify over-excitation of sentient nerves; and since it may be caused by the most varied stimuli, and take forms widely diverse and opposite even in the same organ, it cannot be considered as the special function of the general sense of feeling.

In the explication of these particular sensations, however, we must always bear in mind that in these lowest senses it is frequently most difficult, and sometimes impossible, to decide absolutely whether certain sensations originate in the sympathetic system, or in sentient nerves of the cranio-spinal system, for reasons above stated. There are forms of hemicrania, for instance, which seem undoubtedly to be caused, according to Du Bois-Reymond's observations, by an irritation of the cervical portion of the sympatheticus, causing tetanus of the muscular coats in the vessels of the affected side, while on the other hand numerous other forms of neuralgia appear to have nothing to do with the sympatheticus. Such are the neuralgia of the facial, intercostal, crural, sciatic, and other nerves by irritation of some kind, and the dumb feelings, the crawling and tingling, etc., from pressure, and the like, upon them, or from pressure upon, or disease of their centres. As further instances of the functions of the general sense

of feeling may be mentioned, the sensations we receive from the coolness or warmth of the atmosphere, and from its sultriness, dampness, or dryness; also the sensations of tickling, scratching, itching, burning, etc., caused by various agents, when applied to the external skin, or to its inverted portions, the mucous membranes of the respiratory organs, or the alimentary canal; also sensations of comfort or distress, which well-fitting or ill-fitting apparel may produce. In these last instances we see that sensations of the general sense of feeling border already closely on the sensations of the sense of touch. Anatomical researches fully explain this; for we find tactile corpuscles and terminal bulbs of Krause spread likewise to some degree over a large portion of the general surface, so that a commingling of both kinds of sensations must frequently take place.

What we know positively of the terminations of nerves ministering to what we call general sensibility, as distinguished from the sense of touch, is the following: Non-medullated nerve-fibres pass to the true skin between the cells of the rete Malpighii; they here assume the form of small cells, which lie between the cells of the lower stratum of the rete, from which again still smaller filaments issue towards the upper stratum of the rete, which finally terminate somewhat enlarged beneath the stratum corneum. These nerve-fibres have no connection with the tactile corpuscles. (Paul Langerhaus, *Virchow's Archiv*, vol. 44, p. 325; Max Schultze in Stricker's *Lehre von den Geweben*, vii, p. 136.) Further: "Medullated nerve-fibres form a plexus in the deeper layers of the true skin, from which fibres, some pale and nucleated, and others medullated, pass to the hair-follicles (Kölliker), divide into branches, penetrate into their interior, and are there lost. A certain number of fibres pass to the non-striated muscular fibres of the skin; a certain number pass to the papillæ that have no tactile corpuscles. In the mucous membranes, the mode of termination is, in general terms, by a delicate plexus just beneath the epithelium, coming from a submucous plexus analogous to the deep cutaneous plexus." (Austin Flint, *Nervous System*, p. 44.) The nerves of touch, on the other hand, terminate in tactile corpuscles, probably also in the terminal bulbs of Krause, and in Vater's or Pacini's corpuscles. The difference between general sensibility and touch is also proved

by this : That when the tactile corpuscles have been destroyed (by ulceration, for instance), touch is gone, but pain may be produced ; or that the sense of temperature may be lost, while the sense of touch still remains. Now, these two lowest senses, that of the sympathetic system and that of the sentient cranio-spinal nerves (called the general sense of feeling), we might designate as *vital senses* in contradistinction to those yet to be considered, the *organic senses*, as their office seems to be to announce the regularity or irregularity in which the functiones vitales of the organism are going on. The sense of the sympathetic system seems to be acted upon mainly by stimuli within the organism itself, while the sense of general feeling receives impressions of external stimuli. But this distinction is of no great importance, inasmuch as the stimuli within the organism itself are just as well external to the recipient nerves as those which come from outside of the body, to stimulate all the other sensory nerves.

#### § 74. THE MUSCULAR SENSE AND THE SENSE OF TOUCH.

“The muscles undoubtedly possess nerve-fibres other than those exclusively devoted to motion ; for, in addition to the motory fibres, Kölliker, and some others, have noted fibres with a different mode of termination. These Kölliker believes to be sensitive nerves, but their mode of termination has not been so definitely described as in the fibres with terminal motor plates.” (Austin Flint, *Nervous System*, p. 33.)

“The muscles, too, possess sensibility, but it is of a peculiar nature, as stinging, burning, or cutting do not cause any noteworthy sensations, but they feel sore from long-continued action, become painful from convulsive contractions or pressure, and have a very fine feeling of their own contraction, to such a degree that they discern the slightest differences in their exertions needed for different exercises.” (Kölliker, *Mikroskopische Anatomie*, vol. i, p. 267.)

“There can be no doubt that, in every exertion of the will upon the muscular system, we are guided by the sensations communicated through the afferent nerves, which indicate to the sensorium the state of the muscle. Many interesting cases are on record which show the necessity of this ‘muscular sense’ for determining

voluntary contraction of the muscle. Thus Sir C. Bell (who first prominently directed attention to this class of facts under the designation of the nervous circle) mentions an instance of a woman who was deprived of it in her arms, without losing the motor power, and who stated that she could not sustain anything in her hands (not even her child) by the strongest effort of her will unless she kept her eyes constantly fixed upon it; the muscles losing their power and the hands dropping the object as soon as the eyes were withdrawn from it. Here the employment of the *visual* sense supplied the deficiency of the muscular." (Carpenter, *Comparative Physiology*, 680.)

"I have seen a similar instance recently of a woman, epileptic in consequence of syphilis, who had lost the muscular sense in her left arm, and who did not know, except she looked at the limb, whether she had got hold of anything with her hand or not; if she grasped a jug she could hold it quite well as long as she looked at it, but if she looked away then she dropped it; she had no loss of *tactile* sensation. Ollivier details a case in which the patient had lost the cutaneous sense of touch throughout the side in consequence of concussion; at the same time he was able to form a correct estimate of the weight with his right hand. The physician, observed by Marcet, who was affected with anæsthesia cutanea of the right side, was perfectly able to feel his patient's pulse with the fingers of the right hand, and to determine its frequency and force, but in order to determine the temperature of the skin he was obliged to call in the aid of his left hand." (Maudsley, *The Physiology and Pathology of the Mind*, p. 174.)

This muscular sense is extended over all the voluntary muscles, to which it is the indispensable guide for their actions. The wonderful adaptation of movement of both eyes for seeing purposes; the not less wonderful concert in the action of the muscles to produce talking and singing; the skilful exercises of the hands which the artist as violinist, pianist, painter, or engraver, etc., which the mechanic, the writer, the seamstress, etc., perform; the motions of the legs and body in walking, jumping, dancing, and gymnastic exercises, and so on; none of these would be possible without a muscular sense, an ability to perceive the exact state of muscular tension or relaxation, and an exact estimation of the degree of

contraction necessary for a required motion. This implies, indeed, not only a very great acuteness of the muscular sense, but also a great celerity with which the impressions upon it are received and executed.

The sense of *touch* is anatomically easily distinguished by its tactile corpuscles, and probably also by Krause's terminal bulbs, which bear some analogy to the tactile corpuscles and Vater's corpuscles, but are much smaller and more simple in their structure; they are found in the conjunctiva bulbi, the lips, the floor of the buccal cavity, the tongue, the glans penis, and the clitoris. The functional action of the sense of touch is very closely blended with that of the muscular sense. By it we perceive the externality of things, their extension, form, hardness, softness, roughness, smoothness, etc.; but this is possible only by certain muscular motions and a fine estimation of the force applied necessary to change external objects in their form, which, as has been stated, is the particular office of the muscular sense. For we become conscious of the extension, form, roughness, or smoothness of things only if we move our fingers over their surfaces, and their hardness or softness reveals itself for our consciousness only if we make a certain pressure upon them, and thus find, by estimating the force required to change their form, the actual resistance of their substance against pressure, that is, their hardness or softness.

#### § 75. THE SENSE OF TASTE AND THE SENSE OF SMELL.

A part of the glosso-pharyngeal, which is the smallest of the three divisions of the eighth pair, and a small filament from the facial to the lingual branch of the fifth pair, unite to form what are collectively called the *gustatory* nerves.

According to the researches of Remak and Kölliker, there is a difference between the microscopical terminal structures of the glosso-pharyngeus and lingualis. The first terminates in microscopic ganglia, which the lingualis does not possess (compare Kölliker's *Mikroskopische Anatomie*, vol. ii, p. 32), and it is quite possible that this difference in their terminal arrangement determines also a difference in their functions. The principal localities of taste are the upper surface of the root of the tongue (especially the *papillæ circumvallatæ*), the edges of the tip of the tongue, and probably also the front part of the soft palate. The terminal ap-

paratus of gustation, only lately discovered and described by Loven and Schwalbe, consists of numerous microscopic groups of cells, which are superimposed upon the fibres of the glosso-pharyngeus, and which have been called *gustatory buds* (Geschmacks Knospen by Loven, and Schmeckbecher by Schwalbe). These buds are imbedded within the little cavities formed by the epithelium of the mucous membrane, which they completely fill out. The form of these cavities resembles that of a round-bellied bottle or retort; their bottoms rest upon the surface of the connective tissue of the mucosa, and their necks pierce the stratum corneum of the epithelium, where they form a circular opening or mouth. The gustatory buds are frequently found by hundreds on the lateral portions of the papillæ circumvallatæ, in less number on the lateral portions of the papillæ fungiformes; they consist of fifteen to thirty ellipsoidal cells, which are arranged in a manner like the leaflets of a flower bud. Their upper or peripheral portion gradually tapers off in width, and terminates near the mouth of the cavity either in the shape of a *peg* (Stiftchen) or in the shape of a *rod*; their body consists of a vesicle-like nucleus, while their lower cylindrical extremity at a short distance from the nucleus diminishes suddenly to one-third the size of the upper process, and splits into two somewhat smaller branches, which again divide once or several times more until they reach the surface of the mucosa. The connection of the nerve-fibres with these gustatory buds has not been fully ascertained yet. We know only that the fibres of the glosso-pharyngeus, shortly before their entrance into the papillæ circumvallatæ, contain microscopic groups of ganglion cells. From here several bundles of fibres enter the papillæ and divide into numerous fine, winding, and decussating filaments, which radiate towards the epithelium. These filaments split into still finer branches and form close beneath the epithelium a plexus. Most probably these finest filaments connect with the lower part of the gustatory buds. (Th. W. Engelmann, in Stricker's *Handbuch der Lehre von den Geweben*, p. 822.)

The sense of *smell* has for its instrument the *olfactory nerve*, distributed in that portion of the mucous membrane lining about the upper third of the nose, and called the olfactory region. This surface is covered with epithelium, which consists of two layers, an outer or ciliary and an inner or cellular layer. The cells of

the inner layer are of two kinds, *larger* ones of oval shape, situated more peripheral than the more numerous *smaller* cells, which are of spherical shape, lie lower in the inner layer, have two long and fine processes, of which the upper and thickest goes to the periphery, while the lower may be traced to the stratum of the subepithelial connective tissue. The upper terminates in the fine cilia above mentioned as the outer layer of the epithelium. These cells with their terminal appendices constitute, according to Max Schultze, the terminal apparatus of the sense of smell. How the peripheral cells of the organ of smell are connected with the olfactory nerve-fibres has not yet been fully demonstrated. It is probable, however, that the smallest fibrils of the olfactory nerve are in some way connected with the lower processes of the olfactory cells. (Babuchin in Stricker's *Handbuch*, p. 964.)

Smell and taste are closely related. We may perceive the same property of an object nearly alike with either of these senses; thus, for instance, the "sour or sweet," etc., can be recognized by both senses, and in the middle high German the expression for tasting and smelling was still not clearly separated by distinct words for either.

The nature of the stimuli which excite the gustatory, as well as the olfactory nerves, we do not know. We only know that the gustatory sense requires them in a fluid and the olfactory in a gaseous form; that they probably appertain to the chemical constitution of different bodies, and also that we cannot become cognizant of them by any of the other senses.

#### § 76. THE SENSE OF HEARING.

With even greater perfection we find the terminal arrangements of the sense of hearing constructed. Max Schultze found in the internal ear, especially in the vestibule and ampullæ, the terminal fibres of the auditory nerve project through the epithelium and terminate in fine fibrils or cilia. The termination of the auditory nerve in the cochlea, which Corti first described, is a wonderfully complex and fine mechanism, in which rows of fibres with pedunculated cells are found combined in a manner as to forcibly suggest to the mind a striking resemblance to the keys and strings of a piano. It is difficult, however, to decide which of these terminal structures are nervous and which are not.

[TO BE CONTINUED.]

## ARTICLE VII.—Carcinoma from a Clinical Standpoint.

BY PROFESSOR NUSSBAUM, SURGEON-GENERAL.

CANCER runs through the life of a surgeon like a red thread. Care, anxiety, and a great deal of labor must be devoted to it. Constantly new questions arise, and the answers are many, but few satisfactory. We pass by the valuable researches of Müller, Ph. v. Walther, Langenbeck, Virchow, Bruns, Waldeyer, Billroth, and others, tarry with pleasure at the latest essay of Lücke, and give the prize to the researches of Professor Thiersch. His work on epithelial cancer, which already appeared in 1865, is even today the basis for every new research. I felt when reading that book as if light at once penetrated the darkness, and should something useful be found in these pages, the honor of it belongs to that book.

The questions which arise in studying this disease may be put in such a manner as :

1. *What is carcinoma? How does it originate, what is its course, how does it end?*
2. *What causes cancer? Is it congenital or contagious? Is it from the very start a general dyscrasia, or a purely local disease?*
3. *Is every humoral infection in cancerous patients to be taken as a cancerous dyscrasia?*
4. *How do the frequent relapses occur?*
5. *Is carcinoma radically curable, and by what means?*
6. *Is life prolonged or shortened by operative surgery?*
7. *What internal and what local treatment deserves our confidence?*

I acknowledge that I am unable to answer these important questions, and I rely, therefore, on your forbearance; still I have some right to be heard, as I had over a thousand cancer patients under my hands during the last fifteen years, and the experience gained by these cases increases vastly in value, inasmuch my friend, Professor Buhl, microscopically examined most of the cancerous tumors extirpated by myself, and thus gave value to my observation. Let us begin with the first question :

1. *What is cancer? how does it originate, what is its course, how does it end?*



I consider cancer as an epithelial proliferation, which dislodges and splits the connective tissue, which sends shoots in all directions, degenerates by pressure the adjacent organs, and passes into an ulcerative process by a small, hardly noticeable cause. As soon as detrition is once induced, its progress is steadily onward.

A humoral infection of the whole organism follows, through resorption of the ichorous and dissolving masses; finally the walls of bloodvessels are attacked by the ulceration, apoplexies arise, and the extravasated and decomposed blood increases the malignant products of resorption. With the appearance of hemorrhages the debility increases rapidly. The epithelial proliferations now grow into the invaded bloodvessels, are carried to different organs, and proliferate there in the same manner. The carcinoma, after its removal, rapidly returns, either in the same place or in distant organs. Death sets in either early, when the cancer primarily destroys an organ important to life, or where the humoral infection and the debility, caused by the hemorrhage, saps the foundation of life, or life becomes extinct because the metastatic proliferations disturb now the functions of vital organs.

In considering more closely the development of a cancerous tumor, we find that the initiatory stage is based on a disturbance of the normal equilibrium between connective tissue and epithelium. The vascular stroma, as it were, is the soil, the epithelium the plant.

Through some influence or another, through disease or senility, a weakness of the connective-tissue stroma arises, and with it a tendency to a thickening of the epithelium. The connective tissue is no match to the pressure, and is pushed aside and invaded. Epithelial proliferation, which only can arise in such places where originally epithelium exists, pushes itself forward everywhere; the young, differently formed cells migrate through the neighborhood, act there irritatingly like entozoa, and produce a kind of inflammation. The epithelia become polygonal plates, cylindrical cells, pass into fatty or colloid degenerations. The tailed, cylindrical cell, of which we now know that it is found in most diverse tumors, is frequently observed in this process. The migration of epithelial proliferations pass around so far, and are frequently separated by constriction in such a manner, by inter-

lacing connective tissue, that the new proliferation appears as if it were separated from the mother-focus.

Between sound tissue and the genuine carcinoma we always find some tissue which as yet is not carcinomatously infiltrated, but it is diseased by the adjacent process, and made ready for the cancerous proliferation. Thus it happens that cancer rarely gives us a clean border, but it passes imperceptibly into healthy tissue. Where epithelial proliferation is at home, there all tissues are pushed aside, they degenerate, and are drawn into the ulcerative process. The muscles lose their horizontal striation and pass into fatty or colloid degeneration, the bones are affected and friable, etc.

2. *What causes carcinoma? Is it congenital? is it contagious? is it already, from the start, a general dyscrasia, or a purely local disease?*

It cannot be denied that, with rare exception, cancer belongs to the later periods of life, and when we consider what I just mentioned about the origin of cancer, we find this lateness quite natural. With age the connective-tissue stroma becomes weaker, more devoid of juice, and the power of imbibition of a tissue stands, without any doubt, in direct proportion to its power of resistance. With advancing age there is added to it a tendency to epithelial proliferations, as we witness in the most diverse tissues, especially in the skin, and thus the balance between epithelial and connective tissue is already destroyed. The very thing which renders youth so beautiful is the wealth of juicy fluid, its softness.

Age, therefore, may be considered one of the chief causes. On places, which from the beginning incline to these abnormalities, as on warts, fissures, scars, glandular nodes, epithelial proliferations pass very easily the limits of a healthy range, at a time when age with its own metamorphoses sets in, unfavorable symptoms set in, and we have the beginning of carcinoma. Look at this old man of seventy, who was sound and healthy all his life. From childhood on he had a little wart on his face, and it seemed *in statu quo* for seventy long years; finally it degenerates. The epithelial proliferation is thoroughly extirpated; the man remains in good health again for months; then an epithelial proliferation reappears

on the scar, which is again removed, and he enjoys again good health, and looks well and hearty. For the third time a carcinoma appears on the same place, but this time it is impossible to remove every affected part. The disease spreads, ulceration, humoral infection, metastatic deposits follow, and death ends the scene.

Such a consecutive series is frequently observed, and proves the *ab initio* local character, for it is impossible to say this man, who was hale and hearty for seventy years, was born with dyscratic carcinomatous blood; nor have we any right to affirm that this wart was a congenital carcinoma, which never made any disturbance for seventy long years; it would be even wrong to say that the general malaise preceded the local degeneration, for he enjoyed good health for a long while yet, whereas the local degeneration had already made great progress. The general state of health holds here only a very indirect position.

Let us look for a moment at normal nutrition. You know that the blood, pregnant with nutritive material and with oxygen, is carried through the finest capillary net into the tissues, gives up there the tissue-juices, from which every cell by endosmosis and exosmosis takes up the necessary material, and that furthermore the tissues return to the blood the used-up products. The parenchymatous juice is then the medium between the circulation and the tissue-cells. Hence the chemical composition of the blood, of the parenchymatous juice, and of the contents of the cells are without doubt kept in order by a certain affinity. The osseous cell needs other material than the muscle, and this one again a different one from the connective tissue; but, alas! we know very little yet of the chemical relations in carcinoma, which naturally enough is nourished according to the same rules.

We have to study yet a third factor for nutrition in addition to the nature of the tissue and the quality of the blood, namely, the regulatory activity of the nervous system, which ought not to be underestimated. Let us for a moment remember only how grief and misery bleach the hair, wrinkle the skin; how anguish pales the face, and how shame raises a blush. Through day and through night, as long as life lasts, all tissues and organs regenerate themselves continually; during childhood rapidly and in full ac-

tivity; in senility, tardy; but there is never a pause till in death the laws of chemismus become sovereign. The bone, which is ours to-day, is not the same bone which we had thirty years ago. It is not near as strong; it is more dry, more friable. The skin, which is ours to-day, is not that skin which we had twenty years ago, etc. The changes appearing in nutrition with advancing years are, at any rate, suitable for the development of cancer. The blood perhaps at that age, on account of impoverished digestion, fails to offer any more the former good material, so that the tissues retrograde in nutrition.

A second factor is, the regulatory nervous system may lose in strength with advancing years; but the third factor, the tissue itself, plays undoubtedly the chief part in the development of cancer. Let us consider the places where cancer mostly originates. It is nearly always a *locus minoris resistentiæ*, a chap, a wart, a scar, a glandular node, etc. Of great importance may be considered the expression of the great Walther, that cancer attacks most frequently such places which suffer repeatedly an irritation, but which never advances to the degree of inflammation. We all know that labial cancer may be often caused by the too frequent irritation of the lips, although late and more thorough researches prove the pressure of the pipe less suspicious; still, the miserable and painful shaving of country louts may not be without blame (holds only good for the European continent). Prostitutes, whose uterus is frequently irritated, but seldom to a degree of metritis, suffer frequently from cancer of the uterus. A fact, which not long ago Martin communicated, fits nicely in our theory. Martin found, by his statistical labors, that women, who had only one husband, hardly ever suffer from uterine cancer.

Carcinoma scroti, produced by the continual irritation of soot in chimney-sweeps, belongs to the same class.

Nor must we forget that irritated and elevated parts like warts, cicatricial proliferation, etc., are especially prone to be injured.

We consider ourselves in the right direction when we say that cancer mostly arises at a place of minor resistance, if the changes suitable for its development appear in the blood and nerves, and this is especially the case in old age.

If, in order to prove heredity of cancer and congenital dyscra-

sia, the fact is adduced that so frequently the children of cancerous patients are again attacked by cancer, we confess that we do not consider anything proved by it, for if we recollect that the children inherit from their parents the color of the skin, the form of the finger-nails, the hair, the way of sneezing and to cough, the moles, and all passions, we can easily explain also this fact, without calling cancer a congenital dyscrasia, for, *e. g.*, the tendency to epithelial proliferation may be simply hereditary, the other factors come by themselves. Something poisonous, contagious, can neither be looked for in the blood nor in the carcinomatous tumor, and it is, therefore, absurd to be afraid of the clothing or of the bed of a person afflicted with cancer, or to fear his touch. We surgeons are bespattered over the whole face with hot cancerous blood, we cut and puncture ourselves during such operations, and still we do not inoculate anything hurtful. If we feed a cat with a cancerous tumor, she is not rendered sick by it, but let us do the same with the meat of a glandered animal and the cat dies. We may inject the blood of persons afflicted with cancer in the cellular tissue of cats, and no injury follows. Even by bringing cancerous ichor in the cellular tissue of an animal, we witness at most a circumscribed abscess. Only when you inject cancerous jelly in the veins, as Langenbeck did it in the veins of a dog, a neoplasma of the same cancerous form arises at the place where the jelly is stopped in the narrow bloodvessels. All this speaks against a congenital dyscrasia, against contagion, against heredity, and proves decidedly the primary purely local character, and the possibility of carrying it forward through the circulation.

3. *Is every humoral infection in cancer patients to be considered already as a cancerous dyscrasia?*

I decidedly deny this question, and consider this assertion of great value in regard to practice. Every cancerous tumor stands under the laws of nutrition, and returns in the same manner as every other tissue its products of change into the circulation. But I am fully convinced that these used-up products, as long as there is no detrition, no ulceration in the cancerous tumor, are the same as from sound connective tissue, from sound epithelium; for the natural function of all organs and a healthy complexion continues often for a long time, whereas, at the same time, a solid node

grows in an organ. But when this cancerous node falls to pieces, when foul ichor is formed and absorbed, then the whole organism becomes poisoned, the skin yellow, the breath foul, the muscles flabby, the appetite fails, and fever sets in, even before any hemorrhage appears. Such a state is justly called a *humoral infection*. I am fully convinced that such a humoral infection, before bloodvessels are ruptured in the cancerous tumor, cannot be considered as a cancerous dyscrasia. We may, then, only suppose rupture of bloodvessels, when apoplectic hemorrhages or blood-mixed ichor are visible on the cancerous tumor. The humoral infection before that does not much differ from any other humoral infection which may happen when a crushed mortified foot, without a line of demarcation, remains for a long time in connection with the whole body, or where a stinking arthroceae daily poisons the blood.

Before the cancerous tumor uses up and lacerates bloodvessels, only a thin, finely filtrated ichor enters the circulation, just as in the mortified foot and in the carious ichorrhæmia. But whatever enters the circulation through uninjured walls of bloodvessels may also pass out of it through the uninjured bloodvessels, and is, in fact, passed off through the powerful filter in the kidneys, in the lungs, on the skin. Take away the mortified foot, make a resection of the carious joint, extirpate the ugly cancerous tumor, and the humoral infection passes off in several weeks. The fever, the foul breath, the dark urine, the yellow color, become better from the very hour of the operation. The appetite returns, and the patients recuperate wonderfully.

Such a humoral infection may sometimes reach a high degree, it may endanger life by poisoning of vital organs, but it is certainly not a specific cancerous one, for that very reason it never contraindicates an operation, or rather it must be considered one of its strongest indications.

Let me adduce here some of my experiments, in order to show you the great difference of the effect, when something reaches the circulation by resorption through unopened walls of bloodvessels, or when it is brought directly into the circulation. When I injected into the cellular tissue of my arm three centigrammes morphium aceticum, dissolved in one cubic centimetre water, I felt,

after a minute, a pleasant warmth in the head and chest; if I injected the same quantity directly in the vein of my arm, I had already, after  $\frac{1}{3}$  to  $\frac{1}{2}$  minute, the most severe headache, severe palpitation, anguish and oppression, strong sensation of crawling of ants, mostly on lips and nose, rarely on other parts.\* By injecting the same in the artery of the arm, I felt in the peripheric part severe burning, the hand turned red and œdematous, and, notwithstanding this circuitous route, the same severe headache and the same palpitation set in after a minute, as if it had been injected into a vein. We thus see that with any matter perfectly soluble in water the difference of action is vastly greater, whether the circulation receives the matter filtrated through the walls of the bloodvessels or in an unfiltrated state, but that there is only a slight difference, whether the matter is carried into the venous or arterial current.

Where then the cancerous tumors attack bloodvessels, so that they are torn, and the cancerous mass grows into their lumen, small quantities of it will be carried forward into the circulation and deposited in different organs, inasmuch as we have a mass in the blood of such dimension, that it is impossible to eliminate them through the natural filter of the kidneys, lungs, and skin. These cancerous particles stick fast in places of bifurcating narrow bloodvessels; they erode their walls by pressure, and cause in the respective organs by proliferation similar destructions as are found on the mother-focus. The detrition in secondary cancerous nodes is far more rapid than in the primary focus.

Whenever cancer arrives at such a stage, we may speak of a cancerous dyscrasia, and the extirpation of the original cancerous growth is of no benefit whatever. We understand now the great difference between humoral infection and cancerous dyscrasia. It is most unjust to refuse an operation because the whole organism

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\* My experiments prove that whatever we bring into the blood is carried four or five times as quickly into the head and face as in other parts of the body, so that we may assume the blood between face and heart changes four or five times till the blood between the skin of the thigh and heart changes once. We cannot expect, therefore, to get from the face a drop of blood of such darkness as we find it in the thighs; the oxidation in the latter being, at any rate, more rare.

is already diseased. Humoral infection is the grand indication for operating, carcinomatous metastases the grand contraindication.

#### 4. *How do the frequent relapses arise?*

There are three forms of relapses. We find that the epithelial proliferations creep into all the adjacent gaps, so that it remains questionable in any operation whether all cancerous matter was removed, and whenever such is the case a relapse occurs before the wound cicatrizes, *relapses by continuation*.

The more frequently an operation becomes necessary, the more difficult is the same; we cut more sparingly, and thus more malignant matter remains after a second one than after the first one, and thus we also understand why a third relapse sets in after a shorter period than the second one did, and this one quicker than the first. But even where we remove every cancerous particle, and still cancer arises again in adjacent tissue, which is irritated and rendered diseased by the pressure of the epithelial proliferation; we call this a *regional relapse*.

Finally when bloodvessels are attacked by the cancerous tumor, are torn and epithelial proliferations grow into them, carcinomatous particles will be carried onward by the current of blood, and some of them remain imbedded in the narrow capillaries of different organs. Those capillaries are also used up by pressure, and by continued proliferation the whole organ is destroyed, just as it was the case in the primary focus. This "*the relapse by transplantation*" may be considered the worst of all.

The glandular nodes adjacent to the cancer are in the beginning only in a state of consensual irritation. As soon as cancerous cells are carried into them, they go rapidly into detrition, and we find an epithelial pulp and cylindrical cells in such quantities in the cyst of connective tissue, that it might be taken for an atheromatous cyst.

#### 5. *Can carcinoma be radically cured, and how?*

Rokitansky saw one case, where carcinoma was totally removed by suppuration. Calcification and ossification in scirrhus is also considered as a method of cure. Where the bloodvessels of the connective-tissue stroma become stunted or by cicatrization contracted, then also the carcinomatous cells become atrophied. I am



sorry to confess, that we observe only a partial happening of such a process, and thus only a transient truce.

But I solemnly affirm that carcinoma is radically curable by preventing continual regional relapses, and thus also transplantation, and this can be done as long as it is not an organ important to life where the cancer proliferates. *Early operation* is necessary before any bloodvessels in the area of the cancer have been attacked, and a *thorough and extensive operation* is demanded, whereby not only all the cancerous matter, but also the adjacent tissue so disposed to regional relapses, must be thoroughly removed. We consider as especially favorable, slowly developing level forms, anamnesis, the absence of any syphilitic symptom, the age of the patient, or also the microscope prevents our mistaking it for syphilis. Deeply penetrating cancer always offers great difficulties to a radical cure.

I will not tire your patience with the recital of cases, but I give you one or two in the place of explanation. In the year 1846 I attended Josepha Herrman, 44 years old, who suffered from carcinoma uteri. The patient was forced to keep her bed, as the humoral infection had already made great progress; the stench was terrible, the color of the skin dark-yellow, the breath foul. Inappetency and debility had already reached the highest degree; she could not leave her bed any more alone. After removing a few handfuls of carcinomatous detritus, I put on the chain of the ecraseur. The vaginal portion was large and wide; towards the upper part of the uterus it appeared pointed like a cone. The operation passed off without any hemorrhage, and the piece removed astonished us by its length. We then examined the wound, and detected to our terror that the chain had slipped too high up, opened the plica Duglasii, and caused a prolapsus of the intestines. After returning the intestines with a sponge, we left our patient, as we expected soon a fatal result. Visiting her again a few hours afterwards, we found her lying perfectly contented and without pain in her bed. To cut our history short, everything turned out well; she recovered quickly, and is to-day as well and hearty as any other woman. This was nineteen years ago. The microscope unerringly revealed the presence of cancer. This proves that a radical cure is even then possible, when hu-

moral infection has set in. The slipping upwards of the chain of the ecraseur happily prevented a continuous as well as a regional relapse, and one from transplantation had not yet taken place.

In 1866 I extirpated from a man, obliged to keep his bed from humoral infection, the cancerous rectum, the cancerous prostata, with the urethra inclosed in it, and a piece of the neck of the bladder which had already also become affected with it. Nobody believed in his recovery, but he got well, and worked for four years yet at his trade of blacksmith, looked well, and only had to be careful to keep himself clean. Relapse by transplantation had not yet taken place, and the humoral infection was removed by the operation. He died finally from a regional relapse, inasmuch as it was impossible to remove all tissue carcinomatosly disposed from bladder and rectum.

I could relate many such cases, where health remained good for six, eight, ten years after removal of a cancer, and Warren, Chelius, Graefe, Velpeau, Bardeleben, Brodie, and others report also cases, where patients relieved of their cancer by an operation, lived for eight, ten, twelve, fifteen, eighteen years.

An early and thorough operation is necessary for such a favorable result, especially on organs which are anatomically closed by their structure, as *e. g.*, the penis, uterus, etc.

6. *Does an operation prolong life, or have those a chance for a longer life, where every local measure is repudiated?*

Our answer to the fifth question is the most appropriate reply to the sixth question.

The large statistics, which Le Roy d'Etiolles collected about it, speaks volumes in favor of the operation, and when we consider that every epithelial proliferation acts as a morbid cause on its neighborhood, and that the diseased tissue soon becomes carcinomatous, and again acts injuriously on its surroundings, we look with confidence to an operation which destroys this circulus vitiosus. The continual multiplication of the cellular elements is prevented, its spread retarded. As long as the strength of the patient allows the operation, as long as it is possible to form a healthy-appearing border, it remains our duty to remove at an early stage and extensively every new carcinomatous poliferation, for we know at the present day that humoral infection cannot be

considered a contraindication. Finally, those who passed through an operation enjoy life for months, whereas, those who failed to be operated upon, pass their remaining life in a long uninterrupted decline.

7. *What internal and what local treatment deserves our consideration?*

Let us return to what we remarked on the origin of carcinoma and on the causes of the frequent relapses. Inasmuch as the three factors of nutrition, the tissue itself, the nourishing blood, and the regulatory nervous system, direct also the formation and nutrition of the cancer, we must consider everything of importance which acts on the tissue, on the blood, and nerves, and thus country air, with its pleasures, exhilarating mountain air, may act beneficially; just as grief is injurious, so joy and a quiet contented mind may do good. Everything which supports the power of resistance in the connective-tissue stroma, and weakens the thickening of the epithelium, must act, and does act, well.

After having treated of early and thorough operation, we will now mention the caustic treatment. The common paste of Chloride of Zinc promises as much as the many which are noised about as patent remedies. The chief matter is to cauterize deep enough. A favorite plan with me is the use of the scoop of Esmarch for the removal of the cancer, followed by the white-hot iron. The scoop makes nearly a clean sweep with the proliferation, and the hot iron suits exactly the affected neighborhood. Especially in superficial carcinoma of the cutis such a method deserves our full consideration.

Our attention must be constantly directed on all warts, fissures, scars, indurated glands, etc., which are so much disposed to carcinomatous metamorphosis. At an early age such pathological states ought to be removed before senility, with its tendency to epithelial proliferations and consumption of the connective tissue, invites the dangerous change.

On account of the disproportion between epithelium and connective tissue, Iodine and Arsenicum are frequently thought of in these diseases. Arsenic certainly acts rejuvenatingly on the skin, renders skin and hair tender and clean. The literature teems with cases of cancer cured by the internal use of Arsenic.

Iodine also deserves our confidence, as it acts well in goitre; if its praise is not sounded so much in cancer, we may perhaps have to study yet the mode of its application.

Finally, we have seen good results from Cundurango. Friedrich reports several perfect cures, and I have seen good effects, though no cure, from its internal use. I applied locally only compresses moistened with a solution of sugar of lead, and still the internal use of Cundurango produced extraordinary and lasting amelioration.

Allow me, furthermore, to lead your attention to the parenchymatous injections recommended by Professor Thiersch. Professor Lücke and myself used *Argentum nitricum* in this manner with success, as, according to Thiersch, it produces a shrinking of the cells. Such parenchymatous injections cannot be put in parallel with the process of *Maissonneuve*, which is only a deeply penetrating cauterization. Parenchymatous injection changes nutrition, and, although it has never cured a case, the neighborhood becomes more healthy, and I hope, as soon as the right material and the right modus shall be discovered, that we will be enabled then to vanquish the regionary relapses which are only with difficulty held at bay by an operation. The parenchymatous injections, of carbolic acid, so highly recommended by Professor Hueter, give great promise to fulfil our hopes.

Every physician knows too well that in far-advanced cases disinfectants and anæsthetics cannot be dispensed with. As a disinfectant *Salicyl acid* is very appropriate, and for mitigating the pain, *Morphium* and *Hydrate of Chloral*. Let us learn to vanquish this enemy at an early period, and then we may dispense with the latter.

In again reviewing this lecture, we come to the following conclusions:

1. Carcinoma is a proliferation of the epithelium, spreading rapidly and dislodging the connective-tissue stroma, ulcerating from slight causes, producing locally destruction, causing disease by hemorrhage and ichorrhæmia, and, finally, carrying its particles over the whole organism, produces in different organs the same proliferation and destruction, and thus leads to death.

2. We consider as causes: Advancing years; grief and care;

furthermore, all tissues showing a malproportion between epithelium and connective tissue lead to it; warts, scars, glandular nodes, etc.; and, finally, such parts are especially prone to be attacked by cancer which are often irritated, but never to a degree of inflammation. Cancer is not congenital, not contagious. It is, at first, a mere local disease, and becomes only dyscratic by being carried onward.

3. Humoral infection must be well distinguished from carcinomatous dyscrasia. The former may pass away entirely, and never contraindicates an operation.

4. Carcinomatous relapses are either continuous when cancerous elements were left behind, or regional when neighboring diseased tissue, inclined to carcinoma, was left behind, or a relapse by transplantation occurs, when carcinomatous particles came into the circulation through broken bloodvessels, and were thus carried forward.

5. Carcinoma is radically curable by early and extensive operation.

6. Patients on whom the operation was performed, live longer than those who neglect it.

7. All means, acting on tissue, blood, and nerves, deserve our consideration. Early and extensive operation heads the list.

Caustics are frequently of use, especially after the carcinoma is scooped away.

Iodine, Arsenicum, and Cundurango are valuable internal remedies.

Parenchymatous injections deserve our greatest consideration. Disinfectants and narcotics cannot be dispensed with in far-progressed cases.

These are *my* ideas, gained by study and experience.—*Bayer. Ärztl. Intel. Blatt*, No. 11, 1875.

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The studies and the experience of such high authority, as Professor Nussbaum deservedly enjoys, demands our greatest consideration, and still we must say that he begs the question, that he hardly mentions heredity, and thus leaves a flaw in all his reasoning.

We may well ask the Surgeon-General of the Bavarian army,

is there only one kind of cancer, this epithelioma of which you constantly speak, and are there no other forms of this enemy of our race? Is old age anything else but retrograde metamorphosis, and do we not find many, often fatal, diseases caused by the same backward step? Let us see why is epithelioma, why even cancer in general a disease of old age?

In answer to this last question we refer our readers to the excellent article of Professor Rindfleisch, on Tuberculosis and Scrofulosis, vol. xxii, of this journal, page 188, and the succeeding remarks by the editor on carcinosis; we find there that so many children die from scrofulous diseases, so many adolescents die from tuberculosis in their best years of life, that there were only a few left, who, though enjoying life for many a year, still finally succumb to this enigma of *protoplasmic influence*. Arnott (*St. Thomas's Hospital Reports*, 1871, p. 115) truly remarks: "If our microscopic researches have taught us nothing more, at least they have taught us this,—that the most malignant tumors differ from the most innocent and benign only in certain physical conditions of structure or position, which vary greatly in different specimens, and which, by their variations, seem to explain with sufficient clearness the corresponding varieties of malignant properties." Every day the idea of a disease, as something *per se*, is more and more exploded, and we are glad when men like Nussbaum teach that diseased states in the organism may be reduced to a plus or minus in the household of nature. What this minus may be in scrofulosis, in psora, or call it by whatever name you please, we know not, perhaps never will know it, but so much is certain, that individuals thus affected, hereditarily or by acquisition, are not, as a rule, so able to withstand the acerbities of life, and it is a gain to mankind in general that the weakest succumb. In looking at heredity we see that all nervous disorders are not only hereditary, but that they change one into another, and Brown-Sequard has even shown on his guinea-pigs that artificially produced epilepsy causes the same or some related nervous disorders in their young ones. Scrofulosis, taken in its widest sense, is known to be hereditary, and tuberculosis is only more fatal than carcinosis because more people are living at the age from 20 to 40 than at later periods. Gout is a hereditary disease, accord-

ing to statistics, in more than half the cases, and when this hereditary taint is present a slight noxa suffices to cause the disease to show itself, whereas persons without the hereditary predisposition, even when exposed to the same noxa in far greater proportion, rarely suffer from an attack of gout. In fact, *heredity must be a normal physiological process*, or else how can we explain the family likeness existing, not only between parents and children, but also between generations hailing from one and the same ancestry. Thus even nations show a, as it were, family likeness, which through centuries remained the same. Virchow is right when he says that pathological states are very apt to represent a physiological law.

Nussbaum only accepts a secondary or consecutive dyscrasia by transplantation, and at that stage considers carcinoma incurable; he totally denies the existence of a primitive dyscrasia, and considers it likewise a myth, as he did heredity. Certainly as long as we look only to the physical, chemical, and even microscopic qualities of the blood and nerves, we will have to agree with the materialistic school, to which surgeons mostly belong, and deny the existence of a primitive dyscrasia, but physiology has made and does make steady progress, and from the cellular physiology of Virchow, we steadily progressed to the proto- or bioplasmic theory of Beale, Drysdale, and others. We acknowledge that the primary symptoms as yet hardly exist for the practitioner, for we have no method yet to differentiate between healthy and non-healthy protoplasm, or to find out in what the degeneration consists, and nowadays we know only a degeneration by its products. Bock, in his *Diagnostic*, p. 158, believes in a *primary carcinomatous dyscrasia*, and remarks: "Whenever fat persons without any striking local disturbance emaciate and take on a sallow color, we may expect that somewhere a cancer will develop itself; we believe in a primary dyscrasia, because not rarely with small and not troublesome cancerous tumors the habitus of the patient at once is in a peculiar manner entirely changed, because frequently only after a preceding and rapid deterioration of his general state (*e. g.*, after emaciation and sallow complexion of the skin sets in, in formerly fat persons), a deposit of cancerous matter takes place, because there is just as well an acute deposition of cancerous

masses, running its rapid course, as we find in acute tuberculosis, and because an hereditary disposition of cancer from parents to children has been often demonstrated. Sleeplessness, decided low-spiritedness, tardy stool, are characteristic of cancer, but the hair turns gray at a later period than in tuberculosis." Hartshorne (*Essentials of Practical Medicine*, 49), takes the same view in saying: "The most rational theory of cancer is dynamic. The disease consists in a morbid *tendency*, a tendency to enormous and unhealthy growth of a formation, which is at the same time vascular and sensitive, showing subserviency, although under *perversion*, to the physiological laws of the organization. The origin of cancer is in many cases *constitutional*, and not unfrequently *hereditary*. Genuine cancer may always be expected to return after removal (here we acknowledge that Nussbaum justly considers *early and thorough removal* essential to a radical cure, the very moment too often neglected), although exceptions occur, and it has occasionally been known to undergo spontaneous degeneration."

That there is a primary cancer we need only review the cancers of internal organs. Thus Niemeyer says of *carcinoma of the kidneys*, that it may be primary or secondary, and that it appears mostly in the form of medullary cancer, more rarely as scirrhus or alveolar cancer. It is even found in childhood, and the frequent complication of renal cancer with that of the testes deserves our full consideration, as it reminds us of the still more frequent complication of the tuberculosis of the kidneys with that of the testicles. *Cancer of the liver* may be also primary, but is more frequently secondary, developing 'itself' after the extirpation of peripheric carcinomatous tumors, or by extension from other organs. Again, we find the medullary form prevail, and only rarely epithelial cancer is seen in the liver. *Carcinoma of the stomach* is nearly always a primary one, and in some families the disease seems to be hereditary; here we find scirrhus prevailing, sometimes in combination with medullary cancer. Too often marasmus and sallowness, characteristic of the cancerous cachexia, are the only symptoms during life, till finally the autopsy reveals the malignancy of the constitutional evil. *Carcinoma of the brain* is just as much a disease of advanced age, as tuberculosis of the brain is a disease of infancy. Such round or lobulated, mostly



circumscribed tumors of the brain show the soft consistency and all the other peculiarities of medullary cancer, and scirrhus is far more rarely observed in the brain; a partial retrograde metamorphosis is possible; they become from the centre yellow and cheesy, shrink and thus cause an umbilical retraction of the surface of the brain, where the cancer penetrated so far. *Ovarian cancer* is also nearly always medullary, only very rarely alveolar or scirrhous. This, just like renal cancer, has a predilection for younger persons, and cases are on record, where it even appeared before puberty. Schröder (*Gynæcology*, 406) considers it mostly as an infiltration of the stroma, so that the whole ovary is changed into a carcinomatous mass, covered by the peritoneum. Even with relatively small tumors the rapidly increasing marasmus and the ascites lead us to suspect carcinoma.

*Cancer of the uterus* (Schröder, l. c., 257) has never been seen before the twenty-fifth year, a small proportion between twenty-five and thirty-five, and from that time to fifty the cases increase rapidly in numbers; even after the menopause the number of cases remains very large, inasmuch as the absolute number of women decreases with increasing years. It is more frequently observed in married women than in virgins, but Schröder denies, in opposition to Nussbaum, that prostitutes were especially liable to uterine cancer. It deserves attention that the ostium uterinum, like all other ostia, the lips, pylorus, cœcum, rectum, so frequently becomes the seat of carcinomatous diseases. Most gynæcologists could only exceptionally prove heredity, and blame depressing emotions as its chief cause. With Waldeyer he considers all cancers epithelial tumors; and carcinoma will develop itself, when normal superficial or glandular epithelium, branching off in all directions, bores spindlelike deeply into the tissues, destroys the other tissues by pressure, and pressing asunder the connective-tissue stroma, forms a scaffolding of connective tissue which gives to the whole tumor an alveolar formation. According as the scaffolding of connective tissue, partly forming itself by neoplasia from the irritated connective tissue, or the epithelial cancerous nests prevail, we distinguish two forms, the harder one scirrhus, and the softer one medullary cancer. Guernsey (*Obstetrics*, 699) and Thomas insist on one point here of great importance, that we

must differentiate between true cancer, scirrhus, encephaloid and colloid carcinoma, and between *cancroid or epithelioma*, as in the latter there is less parenchymatous involvement, the disease being more superficial, and the systemic poisoning, usually so rapid in true cancer, being much more tardy of production, and Thomas says, that in certain cases the morbid influence, instead of exciting interstitial deposit, is exerted upon the mucous membrane itself, affecting its production of epithelial cells. In such cases less deposit occurs in the tissues underlying the mucous membrane.

*Mammary cancer*, so frequent and so fatal, is almost always of the scirrhus variety, and occurs always after puberty, mostly at the climacteric age. Although Guernsey (l. c., 748) is against all surgical interference, still from sad personal experience we are forced to side with the surgeons, in order to give the poor sufferer some months of comparative comfort, and to render the disease when it returns much less offensive and trying to the patient, by ridding her of the bulky breast. But to do your patient justice, the entire breast must be removed, with all skin which may be the least implicated so as to have lost its healthy softness, any of the pectoral muscle which may be involved, and all enlarged axillary glands. After the removal it may be well to mop out the wound with some not too strong caustic solution (chloride of zinc, twenty grains, water one ounce). Here again Nussbaum's maxim is indicated; operate early and thoroughly, and then rely on your internal and homœopathic remedies, to eradicate this constitutional taint which has undermined your patient's health, and which is sure to carry her off to an untimely grave. *Internal and early surgical treatment* is my candid advice to any woman suffering from carcinoma mammæ. Though even a Guernsey, a Baruch, and others may decry surgery, the intense pains of an open cancer I have never seen relieved by homœopathic treatment, and it is our duty as physicians to assuage human suffering by every means which holds out, not a cure, but a surety of even transitory alleviation. We do mean surgery, and not narcotics, or else we might be misunderstood.

Our résumé on cancer differs therefore somewhat from that of Professor Nussbaum, inasmuch as we acknowledge heredity as a cause of carcinoma, and that there may be perhaps not near so

often in canceroid or epithelioma, as in the other true cancers, a proximate cause, too often latent for years, which finally leads to the carcinomatous cachexia and thus to death, and in all such cases the breaking out of the local evil becomes only the manifestation of this proximate cause, which cannot be looked for primarily in the blood or nerves, but resides in the protoplasma. Thus only can we explain internal cancers, which can hardly be considered as *loci minoris resistentiæ*, as they are also found in the young, and where therefore the drying-up process of old age cannot be blamed for their existence, and which necessarily defy the knife or the caustic of the surgeon; thus Rokitansky acknowledges, that "carcinoma may originate and subsist not rarely as mere local evils," but he adds, "far more commonly they are associated with a dyscrasia, which often *precedes* and engenders the cancer;" and Van der Kolk remarks, that the germs of this disease lie scattered far beyond the apparent limits of the tumor. Carcinoma is never contagious. Epithelioma is radically curable, but even in true cancer we side with Nussbaum, and advise early and thorough extirpation whenever possible. So much statistics have proved, that life is thus prolonged, and at any rate existence rendered more bearable. Nussbaum recommends internally Iodine, Arsenicum, and Cundurango; let us see whether they are not also homœopathically indicated.

We cannot expect in our provings the symptoms and characteristics of carcinoma, for our Shibboleth only reads, "*similia similibus curantur*," and not "*eadem iisdem*," and furthermore, no prover could become carcinomatous without a disposition to it. In fact we consider still the outward and objective symptom of carcinoma as a characteristic symptom of a faulty nutrition, and therefore many remedies may be indicated in cancer according to the specialty of every individual case. But let us see how it stands with

*Arsenicum*.—Characteristics of cancer are sharp, lancinating, stabbing pains, at uncertain intervals, with sharp cries of anguish, which may be considered as periodic aggravation of a constant chronic affection; marasmus, sallow complexion, emaciation, a tendency to destruction. The periodicity of Arsenic is well known; frequent screaming from pain (31); depressed spirits

(42); pale, yellow, cachectic look (574); sunken, anxious features (610); corrosive ulcer on the lip, painful in the evening after lying down; a sort of tearing and smarting pain, aggravated by the touch and by the air (635); inability to retain nourishment, which is thrown up as soon as it touches the stomach (1042); symptom of cardiac cancer; violent vomiting of a brown turbid matter, mixed with mucus, and sometimes streaked with blood (1070); vomiting of blood (1075); burning in the pit of the stomach, with aching pains (1195); symptoms of pyloric cancer; irritation of liver, with yellowish or sickly pale look (1263); symptoms 2270, 2285, in Allen's *Encyclopedia*, all of them showing the consequences of the cancerous cachexia; the skin becomes gradually yellow, and afterward of a dusky brown color, in cancer of the liver (2512); cancerous ulcers on the skin (2589); burning and painful ulceration (2605); tearing, stitching pains in the ulcers (2620).

Hughes (*Therapeutics*, 54) remarks, that under the use of Arsenicum, in varying dilutions, we will seldom fail to observe an increase in strength, a better oxygenation of the blood, and a healthier performance of the functions in patients affected with cancer. The lancinating pains are frequently relieved by this agent. Bayer (*Applied Homœopathy*, 62) gives Arsenicum credit for relieving the pain of advanced cancerous disease, and for checking to some extent the rapid development of the disease, and that it improves the general health in the cachectic stage. Gilchrist (*Surgical Diseases*, p. 400) gives the following indications: Foul, destructive, easily bleeding, cancerous ulcers; black pustules; burning and corrosive pain in the interior of the affected part; the pains are felt at night even when sleeping; black blisters, burning and very painful, changing to cancerous ulcers; burning in the ulcer or in the margin, or with a lacerating pain when the parts become cold; cancer of the nose, with ulceration of the nostrils high up, and discharge of fetid and bitter tasting ichor; cancer of the face, with bluish lips, or black color of the mouth; spreading, carcinomatous ulcer on the lips; tumor covered with a hot and bluish-red skin, turning black and sloughing; pus copious, watery, bloody, corroding, and fetid; worse in the evening and

at night, from cold, from exertion of the body, and in winter; warmth ameliorates.

*Iodine*.—Emaciation, with voracious hunger, is very characteristic of this drug. Hahnemann, in his *Chronic Diseases*, iv, 1, calls Iodine a heroic remedy, even when employed in the highest potencies, and both schools agree to its great value in scrofulosis, glandular affections, and syphilis. Among its symptoms leading to cancer might be chiefly enumerated: despondency; anguish; restlessness; red, burning spot on the nose, under the eye; itching elevation on the nose; pale, contracted face; pale, yellow complexion; suppurating ulcer on the left cheek, with swelling of the surrounding glands, and a hard nodosity at the place which the ulcer occupies, dispersing very slowly; small elevation on the inner side of the right cheek; in the beginning they felt aching and sore when touched; in a few days they became lancinating and cutting like an ulcer; induration of the uterus is speedily transmuted into cancer; diminution of the cancerous degenerations in the neck of the uterus; pulmonary consumption; great prostration and general emaciation; anasarca and ascites.

Teste (*Materia Medica*, p. 375) makes a remark about Iodine, which is also applicable to our theme, when he says: "Although I look upon tubercular meningitis as a disease for which we do not possess as yet any remedy, I am nevertheless willing to admit that in some cases of hydrocephalus, whether of recent origin or of long standing, *but not tuberculous*, Iodine may render eminent services. Just so I believe that Iodine will render good services in epithelioma, but that it will fail in any stage of a true cancerous disease, inasmuch as the adjectivum of Iodine is a hyperfibrinous state, and not an albuminous pre-eminence, as found in these advanced stages of scrofulosis, namely, tuberculosis and carcinosis."

*Cundurango*.—No proving of this drug in our literature. Dr. Adams (*Transactions of the N. Y. State Homœopathic Society*, 1874, p. 291) considers its chief province in scrofulous and syphilitic degenerations of the skin. Pathogenetic effects were: vertigo and painful oppression of the head, red face, violent pain in small of back, with nausea and fever. He cured with it a severe case of salt-rheum, with rhagades on different parts of the body, discharging

an ichorous fluid, very irritating to the surrounding parts. In the ninth volume of the same *Transactions*, p. 542, we find a paper on Cundurango mentioned, which, after being read by Dr. Paine, was discussed, and the general opinion of the New York State Society was, that it greatly relieves the sufferings of cancer, but fails to cure it; a fact which perfectly coincides with the opinions held by Clotar Muller and others of Continental reputation (*British Journal of Homœopathy*, xxx, 639). Still it has cured some cases of epithelioma, relieved greatly the pains of mammary cancer, and retarded its progress; and Professor Friedreich (*N. A. Journal of Homœopathy*, xxii, 555) even reports a case of carcinoma ventriculi cured in two months by a macerated infusion of Cundurango. It is a remedy certainly worthy of being proved, and till this is accomplished, no complaint can be made if physicians try it, especially where the disease is yet recent, and report their cases, may they be successful or otherwise.

*Acetic Acid.*—Gilchrist (l. c., p. 400) considers this acid the only agent known that will dissolve cancer-cells. Peters recommends it for the destruction of warts. Allen (*Encyclopedia*, p. 4) gives us: Eyes sunken and surrounded by a dark circle; face pale and waxen; tongue pale and flabby; *scirrhus of the pylorus*, pain as of ulcerative gnawing at a spot in the stomach, following after a depression and agony,—ulcer in the stomach, which seems sore in one spot, with gnawing; he does not suffer pain, but his agony is distressing, preventing his falling asleep or remaining long in the same position; towards midnight he feels very sick and vomits a yellow, thick matter, like yeast; severe burning pain in stomach and abdomen; atrophy; hemorrhage; general anasarca.

*Carbolic Acid.*—Hypodermically injected it certainly stops superficial inflammations, like traumatic erysipelas. It is our grand external and internal disinfectant and destroyer of fungi, but it has nothing in common with diseases based on faulty nutrition, on lowly organized protoplasma, and we consider, therefore, the Carbolic, or also its progeny, the Salycilic acid, only indicated in the late incurable stages of cancer as a disinfectant. Neither in Professor Hoyné's provings, nor in my own, can I find any symptom relating to cancer.

*Carbo animalis*.—We extract from Hahnemann's *Chronic Diseases*, iii, p. 8: "Carbo animalis corresponds to the period when ichor is formed. It is especially adapted to scrofulous and venous constitutions, hypertrophy of both internal and external organs, glandular swellings, threatening to become scirrhus, attended with lancinating or cutting pains." (Wurm.) Among its symptoms we read: Anxious and desponding, especially in the evening and at night; the tip of the nose becomes red and painful when touched; swelling of the nose, with pimples inside and outside, forming scurfs which last a good while; the skin of the face is painful, especially on the cheeks, around the mouth and the chin (after shaving); yellowness of the face; a small red pimple on the chin, with a yellow tip; fetid urine; acrid, burning leucorrhœa (Schmalz reports a cure of uterine cancer in *Teste, M. M.*, 613); painful induration of the breast; induration of the cervical glands; profuse and exhausting sweats.

Of *Hydrastis*, Bayer remarks (*British Journal of Homœopathy*, xix, 151) that it exerts a marked influence in removing the pain of cancer, and in modifying the discharge, depriving it of its offensiveness. It usually improves the general health in a marked degree, but if carried too far produces great prostration, which passes off by omitting the medicine for a few days and then resuming it very cautiously. Hale (*New Remedies*, 2d edition, p. 559) believes that *Hydrastis* may be capable of modifying the vitality of the lymphatic system, and thus exerts a curative influence upon all glands. It modifies the cancerous dyscrasia. It ought to be tried for the pain and vomiting of cancer of the stomach, as we find among its symptoms, great sense of sinking and prostration at the epigastrium, with violent palpitation of the heart; a burning pain in the umbilical region, with faintness; jaundice, from structural disease of the liver; also in uterine and mammary cancer, as especially in the latter it gained some renown.

*Hydrocotyle Asiatica*.—Ruddock (*Text-book*, 263) mentions this remedy as of benefit in uterine cancer, but we cannot see the reason. It appears to act similarly to *Hydrastis*, as it produces great heat of face, nausea, anorexia, heaviness of the head, vertigo, universal feeling of illness and general debility. It cured obstinate and inveterate eczema rapidly and completely, and it is

highly praised in elephantiasis. The cases we find reported in the *British Journal of Homœopathy*, xvi, 587, show granular ulceration, but there is no proof of carcinoma uteri.

*Kali brom.*—The same author recommends this remedy for cancer of the brain or nervous system, causing convulsions. Now we might just as well acknowledge, with Niemeier and others, that cerebral tumors defy as yet our armamentarium, and for the convulsions we have many remedies, any of which might be indicated just as well as the just now fashionable Bromide of Potash, according to the totality of subjective symptoms.

*Kali bichromicum.*—Several writers compare this remedy with Arsenicum, the only remedy which we have so far found to act well in cancer. Chromic acid is known to be one of the most thorough caustics, and acts, at the same time, antiseptically. In its cauterization it penetrates into the ulcerated tissues, and here its action is perfectly homœopathic, as laborers in manufactories of chromic acid suffer from extensive and deep ulcers, especially on the arms (*Nothnagel, M. M.*, 398), but they are generally dry, whereas open cancers are known by their foul discharge. Some of the symptoms of Bichromate of Potash point to deeply seated affections of the liver and kidneys, and the post-mortem examinations of animals poisoned by this drug show some similarity to carcinomatous livers and kidneys. It deserves more study in its relation to malignant diseases.

*Kreasote* ought to do a great deal in carcinomatous cachexia, if all is true what Noack and Trinks say in its praise, as that it is particularly suitable to individuals with a torpid, leucophlegmatic disposition, a lax and lymphatic constitution, with vitiated humors, impoverished vitality, prostration of the vegetative sphere, disposition to blennorrhœa of every description, to suppuration and ulceration, to fluidification of the blood, with tendency to putrefaction. Still we will find it only of temporary alleviating some distressing symptoms. Thomas Hughes (l. c., 362) remarks that the vomiting of phthisis, of cancer of liver and uterus, and of chronic renal disease, also of cancer of the stomach, is frequently arrested by it. Hilbers considers *Kreasote* as having great power of sustaining the strength in some exhausting diseases. Let us recollect that Teste (l. c., 122) finds *Kreasote* most



suitable to delicate cachectic children. We may, perhaps, find in Kreasote one of the remedies which, according to the symptoms, may be able to eradicate a latent cancerous cachexia at an early age, and thus prevent old age from becoming a source of misery to itself and all around the poor sufferer.

*Lapis albus*.—What is it? Grauvogl's recommendation alone will not do, and we need more proof of its efficacy before it can find its place in the therapeutics of carcinoma.

*Magnesia murias* removed scirrhus induration of the uterus. Hahnemann (*Chronic Diseases*, iv, 170) considers this drug a most valuable antipsoric, and recommends it most earnestly for further trials. Its liver symptoms are pregnant and deserve our study, but still we only see chronic induration, and may not the same hold good of that scirrhus (?) induration of the uterus? Our diagnostic records are not always up to the mark, and must be taken too often *cum grano salis*.

We think involuntarily of *Phosphorus* when the unwelcome sight of a fungus hæmatodes greets our eyes. "Small wounds bleed much," either from paralysis of the vaso-motor nerves or from a minus of fibrin in the blood, explains many a good action of this remedy. Hughes (l. c., 444) is again right in his remark, that *Phosphorus* has no power of modifying the tubercular, or we say the carcinomatous dyscrasia, but in its combination with nutrition-modifying salts, it certainly takes a high rank, and our *Calcareæ phosphorica*, or in combination with potash, soda, or magnesia, it may aid the restorative power of nature, and change a vicious bioplasma to a healthy one. Here it is where Schüssler's still crude notions may help us to unearth a Bonanza, which awaits yet its workers. *Kali phosph.*, depressing in large doses the action of the nerves, and decomposing the blood, may become the remedy where from depressing emotions the right pabulum fails to be provided, especially as most researches show, that the potash itself acts on the central nervous system, especially the spinal cord, and on the vaso-motory apparatus (Guttman, Traube). He praises *Magnesia phosph.* as the nutrition and function remedy for the nervous tissues, and *Natrum phosph.* in leucæmia or the white blood-cell disease. If it is true that the phosphate of soda has the power to reduce the not yet hardened swelling of the lym-

phatic glands, it may give us a hint to use this nutrition-remedy in hereditary cases, and thus change a vicious bioplasma to a healthy one. All these salts of Phosphorus ought to be thoroughly proved in order that they be more understandingly given.

*Sanguinaria*.—One of the ingredients so often used by so-called cancer doctors. Ruddock (l. c., 263) mentions Dr. Craig, who greatly relies on this remedy to prevent the return of cancer after excision. In its pathogenesis we fail to see any indications pointing to cancer and hardly even to scrofulosis.

Our admirable polychrests, *Sepia*, *Silicea* (Lapis albus), *Sulphur*, will be indicated *pro re nata* in every case of dyscrasia or cachexia. By strict individualization they will save many a life from troubles in later years, but it would be impossible to give their indications.

*Thuja and Natrum sulphuricum*.—Hydrogenoid constitution and sycosis, but that is not cancer. Even Radetzky's case was more probably only a malignant tumor, but no true carcinoma.

Why is *Conium* left out? I acknowledge that it has disappointed me in the treatment of cancerous diseases, and I am glad to see that Hughes (l. c., 244) agrees with me. Simple mammary induration is not scirrhus, and for the relief of the pain in cancer we have better remedies in *Hydrastis* and *Cundurango*.

May we not hope to find suitable remedies in combination. *Calcarea arseniosa*, Iodide of Arsenic, and similar ones hold out some promise, but they also need proving and confirmation when ever applied.

It is to be deplored that our school stands as weak against this fearful disease as all other schools. But let us not give up the case. Let us not search after a specific remedy, for none will ever be found; rather let us see what can be done to eradicate vice, for an old good book admonishes us, that the sins of the father shall be punished in the third and fourth generation.

S. L.

## ARTICLE VIII.—Clinical Cases.

By S. B. HIGGINS, M.D.

### CORROBORATED SYMPTOMS OF APIS MELLIFICA.

No. 1. CASE 195. Feb. 15th, 1874.—*Chronic Diarrhœa.*—F. A., a stout, tall, strong-built negro, æt. 38, married; has five children; by occupation a butcher; has had chronic diarrhœa for the past twenty months. Says he has been treated by every physician in the place without any benefit or relief; that he has tried every remedy that has been recommended for his complaint without getting any better.

Patient has 6–8 stools during the day and 4–5 during the night. Fæces dark-colored, fetid, soft, mixed with blood; difficult to retain. Immediately after eating, urgent necessity to stool; the blood is brownish-red, and with it there is a glairy mucus. Urine sp. gr. 1.0245, dark-brown, clear, with very slight deposit of cilia. Constant rumbling of wind in intestines, with colicky pains, aggravated by expulsion of fæces. Appetite only at times fair; otherwise almost null; slight cephalalgia. Cannot sleep much at night. R̄. From Feb. 16th, Apis mell.<sup>12</sup>, 7 drops in half pint aq., a swallow daily. 23d. 8.30 P.M., can retain fæces; break wind and retain fæces; much less blood, fewer stools, and only slight pains in bowels; slight cephal.; R̄. Apis<sup>12</sup>, 7 ut supra, daily. March 2d. Two stools daily; none during night; much pain in renal region for 2–3 days past. R̄. 7 placebos daily. 10th. Only 2–3 stools daily, with slight trace of blood in fæces; none during night. R̄. Apis<sup>12</sup>, 7 ut supra, a swallow daily. 28th. 9 P.M., much better; has been working hard during past week on his farm; to-day three stools; none at night; feels like a new man; R̄. Apis.<sup>cc</sup>, 2 powders, and <sup>12</sup>, 4 powders, marked 1 2 3 4 5 6; those *Italicized* being the <sup>cc</sup>. April 6th. No stool during night; two stools during day; no pain in bowels; appetite good, and says he feels perfectly well.

Jan. 1st, 1875. Cure confirmed; no relapse, and no medicine since last April.

No. 2. CASE 542. July 10th, 1874.—*Chronic Diarrhœa.*—John N. L., white, æt. 68. Has had chronic diarrhœa for two

years. Has tried all the medicines recommended to him, and all the doctors, from Alabama to this place, without relief. He came all the way on foot, stopping along as he felt his strength fail him from time to time.

Has 2-3 copious stools daily, and 5-6 every night; fæces color of ashes; oftentimes he cannot urinate without having a stool at once; fried food of any kind aggravates; feels no pain at any time in intestines; no blood in fæces; stools fetid; half liquid and half solid. *Ry.* To be careful about his food, and Apis mell.<sup>12</sup>, 10 powders; to take a powder daily. 20th. Much better; two stools at night and two stools during the day; feels much encouraged, and says he is getting well fast. *Ry.* Apis<sup>12</sup>, 5 powders, a powder every two days. August 1st. A stool every twenty-four hours (none at night); has regained strength, and feels quite well again; stools have a natural consistency. *Ry.* Apis mell.<sup>c</sup>, 2 powders, a powder every seven days. 15th. Perfectly well, strong, and hearty.

Jan. 1st, 1875. Cure confirmed; no relapse.

No. 3. CASE No. 574. *July 28th, 1874.—Chronic Diarrhœa.*—Delfia L., white, æt. 40, unmarried; never has had children; occupation, cook, washer, and ironer; a snuff-taker; chronic diarrhœa for five months. Stools loose, semi-liquid, 5-6 by day, and 6-7 at night; much pain across abdomen, and constant tenesmus; aching, bearing-down pain in left pleura at lower anterior edge; abdomen feels sore to pressure. Has tried a host of household remedies, and two prescriptions from different allopaths, without any relief. *Ry.* Merc. vivus<sup>6</sup>, 6 drops in 1 pint aq.; a swallow after every stool. 31st. No relief in any way. *Ry.* Apis m.<sup>12</sup>, 10 drops in aq.; a swallow every two hours. Aug. 3d. Much better. *Ry.* Rem. ut sup. 5th. No blood in fæces; more consistency; only feels slight sensation of "goneness" in bowels; no stools at night. *Ry.* Apis m.<sup>12</sup>, 10 drops in 1 pint aq.; a swallow daily. 10th. Says she is perfectly well.

Jan. 1st, 1875. Cure confirmed; no relapse.

No. 4. No. 133. *Feb. 9th, 1874.—Colliquative Diarrhœa and Colic.*—E. J. H., white, æt. 32, blacksmith; black hair, dark-blue eyes; very quiet, inoffensive disposition; found him at 1.30 A.M. vomiting, with colliquative diarrhœa, severe colic, and tormina.

Before going to bed he had eaten some canned oysters, and at the last mouthful one of them seemed to be slightly tainted, but so little so that he washed the taste out with a glass of water, and went to bed soon after, to be awakened in a couple of hours with a sudden inclination to stool, followed by a violent attack of colic, with rumbling of gases in bowels, and soon after vomiting. *Rx.* A cup of strong coffee, without milk or sugar, and in thirty minutes *Apis mell.*<sup>12</sup>, 3 drops in a tumblerful of aq., a tablespoonful every thirty minutes. In fifteen minutes after the first dose of *Apis* entire relief from every symptom above noted.

Feb. 15th. No relapse. Cure confirmed.

*No. 5. No. 134. Feb. 9th, 1874.—Colliquative Diarrhœa and Colic.*—S. M. H., white, æt. 7, daughter of the preceding. Ate some of the oysters from her father's dish at the same time, and at 1.30 A.M. had the same symptoms as him, excepting that the colic was more violent. *Rx.* *Apis mell.*<sup>12</sup>, 1 powder dry on the tongue. Entirely relieved of every symptom in ten minutes by the watch. She got nothing more, and ten days after there had been no relapse of any kind.

*No. 6. No. 484. June 16th, 1874.—Diarrhœa.*—J. G., black, æt. 49; large, stout negress. Diarrhœa for 4–5 days, with tenesmus and blood in stools. Now she has constant bearing-down pains, with inclination to stool, but a scanty evacuation every hour. *Rx.* *Apis m.*<sup>12</sup>, 4 drops in a tumbler of water, to take a tablespoonful every hour till relieved. June 20th. Relieved at second dose, and no relapse; to-day feels *perfectly well and bowels act regularly.*

*No. 7. No. 534. July 6th, 1874.—Diarrhœa with Metrorrhœgia.*—N. W., mulatto, æt. 27; child at breast three months old; has had discharge of blood from womb, and in stools for four days, with slight spasmodic pains in abdomen now and then. *Rx.* *Apis mell.*<sup>30</sup>, 10 drops in half pint aq., a swallow twice a day till relieved. July 20th. Was relieved entirely on second day after first d. rem., but she took it all up, although I ordered her to take it only till relieved entirely.

One of my South American remedies, potentized by Dr. B. Fincke up to the C<sup>m</sup> potency, has done me such splendid service in so many cases that I feel warranted in calling the attention of

the profession to its virtues in corroboration of a principle enunciated in my work entitled *Ophidians*.

*Fel Elaps Corallinus* is the gall of the coral snake. *Elaps Corallinus* is prepared from the venom of the same snake. The pathogenetic action of *Fel E. C.* is in many respects similar to *E. Corall.*, but in almost every case its action will probably be found to be *much more strongly marked* than that of the latter. Many clinical cases have been published already in the journals corroborating Dr. Mure's pathogenesis, "Pathogenesie Brasillienne," in many of the symptoms. The following cases will serve to give the profession some idea of the value of *Fel E. C.*, as a medicinal agent.

No. 11.—Cases in N. C. *May 13th, 1873. Sore Throat.*—Mrs. I. I. H., white, æt. 36, above medium size, full habit. Exceedingly painful deglutition of both solids and liquids; sharp pain and soreness to touch across the chest from right to left axilla; frontal cephalalgia; sides of the throat sore to touch; sides of buccal cavity above fauces covered with numerous dark-red points like incipient pustules. 2 P.M. ℞. *Fel E. C.*<sup>∞</sup>, 1 dose; dry on the tongue. Every symptom entirely relieved at 5 P.M.

No. 1. *April 13th, 1873.*—Miss E. P. L. H., blonde, æt. 27, sudden epistaxis while walking; profuse. R. *Fel E. C.*<sup>10m</sup>, 10 minim pellets; flow ceased entirely in one minute, and five minutes afterwards a violent blowing of the same nostril did not provoke the flow.

CASE No. 7. *Epistaxis.*—S. S. H., white, æt. 6, full habit, rosy cheeked; got a blow on the tip of nose with a stick, which started it to bleeding excessively; he was much frightened at the sight of the blood, and this augmented the flow. ℞. *Fel E. C.*<sup>∞</sup>, 2 minim globules. Flow ceased entirely in less than two minutes by the watch. I gave this small dose purposely to see how small a quantity would show any efficacy. Five minutes afterwards the most violent efforts of blowing through the same nostril did not provoke a renewal of the flow.

In a dozen other cases of epistaxis not noted in my case-book, I have invariably checked the flow with a small dose of any potency from <sup>∞</sup> to 50<sup>m</sup>, in the same short space of time. I have always noticed that the higher potency seems to act the most quickly,

and latterly almost invariably give the 50<sup>m</sup> potency in every case, without having as yet to record a single case of failure.

CASE No. 200. *Feb. 16th, 1873.*—B., female, white, æt. 7, croup; complete aphonia; sibilant râle, wheezing; the râle is heard in the bronchia and extends down to lower apex of both lungs; at night she chokes and turns pale while sleeping; feels soreness to swallow in throat below fauces; no fever; no sound of respiration in left lung; dead sound by percussion; rattling very distinct in right lung at each inspiration; pulse 90; skin dry, but not hot. Has had tar-water, kerosene, turpentine, tobacco, hog's lard, calomel, and other remedies of a like nature, mostly given by the family doctor. *Rj. Fel E. C.<sup>o</sup>, 1 dose in four ozs. aq. font., to take a swallow every hour till relieved.* After she took first dose of the potion I learned she had scanty discharge of urine with frequent inclination to urinate. *Feb. 17th, 9 A.M., much better; less wheezing; can articulate some words distinctly; pains all gone. Rj. Fel E. C.<sup>o</sup>, 2 powders, one every twelve hours.* 20th. She had recovered her voice on the 18th, and throat troubles had all disappeared. Urine normal.

CASE No. 214. *Feb. 28th, 1873. Cough.*—W. S., male, white, æt. 26, foundryman. Took a sudden cold, and since yesterday has had a dry cough, frequent and constantly recurring paroxysms. *Rj. 9 P.M. Fel E. C. 50<sup>m</sup>, 6 powders, to take one every six hours.* March 1st. He told me he only had to take one powder, as the next morning when he got up his cough was all gone. He said he never had any remedy cure a bad cough so quick in his life.

CASE No. 182. *March 12th, 1874. Sore Throat with Œdema.*—S. S., white, æt. 22, seamstress, tall, robust young woman. Deglutition of solids or liquids almost impossible; throat exceedingly sensitive to touch; tonsils swollen so that no passage is visible. *Rj. Fel E. C.<sup>20m</sup>, 40 minim globules in four ozs. aq. font.; a table-spoonful every hour till relieved.* 13th. No pain to swallow; œdema of tonsils and also of glands of neck almost disappeared. She calls the medicine a "magic remedy."

CASE No. 107. *Jan. 31st, 1874. Uterine Hemorrhage, Metrorrhagia.*—J. W., white, æt. 39, unmarried. Patient has been confined to bed for a year with cancer uteri, and has been treated with carefully selected remedies for 4-5 months without any ap-

parent benefit. At 10.30 P.M., I was summoned in great haste to her bedside, and found that she had seated herself to urinate, when at the first effort she felt something burst in her womb, and a continuous stream to flow from it, which proved to be dark-colored blood. Up to the time of my arrival she had discharged from six to eight pounds, mostly liquid, containing some clots, but all venous blood. *Ry.* Fel E. C.<sup>cc</sup>, a powder, dry on the tongue; flow ceased entirely in twenty minutes. During the ensuing four months previous to her death, she had a repetition of the uterine hemorrhage on two occasions, which was entirely checked at once by the administration of the same remedy in the same dose.

CASE No. 1028. *March 6th, 1875. Metrorrhagia.*—A. H., octoroon, æt. 47; lives in the country a short distance from Charlotte. Patient is married, but has no children. Has suffered metrorrhagia for a year past.

For five weeks she has been unable to rise from her bed. Has been treated by no less than twelve physicians, and most of them said she must certainly die. The discharge has been very dark-colored liquid and clots, but mostly liquid, and varies from half a pound to two or three pounds in twenty-four hours.

She has the appearance of a corpse rather than of a living person, and is so weak she can hardly hold a small tumbler of water in her hand without help.

Has a sensation of soreness across lower abdomen; slight pain to urinate; dragging pain in both temples. At times has a pain in left pleura, slight, almost always relieved by chewing a small piece of gum camphor. *Ry.* Fel E. C.<sup>ssm</sup>, a treble dose in a pint of aq. font., to take a tablespoonful of the potion every six hours till flow ceases, then suspend remedy. 12th. Discharge of blood diminished gradually till the 9th, when it ceased entirely. She feels like another person. 17th. Found her sitting up by the fire; no further discharge of blood; feels as well as she ever felt in her life, except the weakness; cooked her own breakfast yesterday. Since she suspended the remedy has been taking placebos. All pain has disappeared. This patient was treated by plugging the os, injections of Iodide and Perchloride of Ferr., by all kinds of astringent injections, of red-oak bark in decoction, and also of a *solution of Tannin, all without avail.*



CASE NO. 940.—*Pneumonia*.—M. N., black female, æt. 49, has had lung troubles for three years. 7.30 P.M. Now has had no sleep for seven nights; pain in right lung for eight days; is lying decub. sup.; cannot turn to either side nor sit up without assistance; sibilant râle with crepitation in both lungs; right lung sounds dead under mamma and near armpit to percussion; each inspiration causes a crackling sound like that of fat or lard on a hot fire; respiration very difficult, almost agonizing; vomiting all the forenoon; diarrhœa all day. All who have seen her to-day think she must surely die. *Rj.* Fel E. Corall.<sup>50m</sup>, 1 F. powder dry on the tongue, and placebos of aq. font. every hour during the night. 31st, 4 P.M. Relieved much last night, and up to 10 A.M. to-day; since then not so well. Constant cough all day; urine this A.M. was like blood; at this hour it is only slightly reddish. *Rj.* Fel E. C.<sup>50m</sup>, 3 powders, one every twelve hours. Remedy apparently exhausts its action in about twelve hours; wheezing less; râle less; respiration not more than 40 (yesterday it was 52).

Feb. 2d. Wheezing and râle gone; crepitation gone; can sit up without help. *Rj.* 30. Cough less frequent; no blood in urine; feels much better; no fever; pain in lung almost entirely gone. *Rj.* Suspend remedy. Feb. 3d. She got up and walked across the street to another house. Thermometer outdoors 32° Fahr. 4th. Took a slight cold. All the acuteness of the attack of pneumonia gone since yesterday. March 1st. No relapse; says her lung troubles are very much better every way.

The foregoing cases seem to place the efficacy of this substance beyond the possibility of doubt, and I feel certain that it will prove an addition to our *Materia Medica* of very great value. In the treatment of diseases of the throat and pneumonia, there is no remedy known to the profession so efficacious as this one in the potencies from 10<sup>m</sup> to C<sup>m</sup>. May I ask those using it to please report cures to the journals, noting carefully all prominent symptoms?

**ARTICLE IX.—Menstruation.**

BY PROF. A. GUSSEROW.

WHAT is the source of the menstrual bloody discharge? We see the blood ooze out in a weak current from the orificium uteri; it probably flows out in the same quantity as it is discharged inside. Virchow found, in women who perished during menstruation, the mucous membrane in a state of hyperæmia, succulent, swelled, in fact, in a state of acute catarrh. Kundrat (*Striker's Med. Jahrb.*, 1873, ii) describes the uterine mucous membrane during menstruation swelled, three to six millimetres thick, greatly relaxed, deliquescent and soft, puffy, and covered with a white, often bloody mucus. It is injected, equally reddened. The orifices of the glands are plainly visible, inasmuch as the stroma is loosened and rises above the orifices of the glands, so that funnel-shaped cells arise. The swelling up begins slowly already before the real discharge of blood, and reaches its acme at that time, whereas afterwards the swelling also slowly diminishes. Microscopical examination reveals slight degrees of fatty degeneration in the cells of the interglandular tissue, so that they appear dull with fatty drops. This slight fatty degeneration is also observed in the bloodvessels and epithelia of the glands. All these changes are only observed on the superficial layer of the uterine mucous membrane; the more deepseated layers in the region of the fundus of the glands appears normal. In the uterine mucus Kundrat often found numerous cast-off epithelia.

We thus see that the changes in the uterine mucous membrane at the time of menstruation, *especially before the appearance of the bloody discharge*, are exactly the same as in the formation of the decidua at the beginning of pregnancy, so that menstruation was always considered as a miniature pregnancy, as a preparatory stage for the development of the ovum, and the formation of such a decidua menstrualis takes place at regular intervals of about four weeks, quite independently from fecundation.

Menstruation had been always studied in a certain relationship to the ovaries. It was known that there is no bloody discharge where there are no ovaries, but Bischoff showed first that at every menstruation a follicle ripens, swells up, and bursts, whereby the

ovulum drops out, and the formation of the corpus luteum begins. He acknowledges exceptional cases, as *e. g.*, that not always a follicle bursts, and mentions especially that menstruation must only be considered a symptomatic process during ovulation; that the latter may take place without the former, and perhaps also *vice versa*. It is wrong to consider both processes as if they were cause and effect. The menstrual discharge may favor perhaps the bursting of a Graafian follicle, but it is not necessary to it, and we will examine by and by whether ovulation and menstruation are sequelæ of one and the same process, a periodically appearing congestion to the genital organs; but so much is certain, that ovulation takes place without menstruation, and the reverse could hardly be proved. The best proof that ovulation took place is pregnancy, and this has happened in young women before they ever menstruated, and cases enough are reported where women had several children though they never had menstruated. How frequent are the cases where nursing women conceive before the reappearance of the menses, or where no discharge takes place on account of anæmia or chlorosis. Deshayes (*Gaz. Hebd.*, 14, 73) reports a case where a woman passed two years ago her climaxis, and still in her fiftieth year was delivered of a child.

Some authorities stand on the opposite ground, and affirm that menstruation happens without ovulation, and Kölliker failed twice to discover the corpus luteum in ten women who died during menstruation. Similar observations are found in the works of Ashwell, Beigel, Paget, and others. Without mentioning that it is doubtful whether all such cases are really menstrual discharges, and not an accidental bleeding, Bischoff already showed that even with a menstrual discharge it may be possible that the follicle did not burst, perhaps because it was too deeply imbedded in the stroma of the ovary, and thus perished by progressive metamorphosis, as Slaviansky has shown on normal ovaries.

It is generally believed that during normal pregnancy no ovulation takes place, although cases are recorded where women had a bloody discharge similar to menstruation during the first months of pregnancy, and again where women only menstruated during pregnancy. But these cases only show that exceptionally ovulation may be possible during pregnancy, and we might expect to find

corpora lutea in the ovaries of such women. After all, exceptions only confirm the rule.

Let us look now at that process usually denominated *pseudo-menstruation*, *i. e.*, uterine bleedings, appearing from diverse causes, and anatomically characterized that no Graafian follicle did burst. If this were menstruation, it would really prove that menstruation would be possible without ovulation, but a uterine bleeding is not necessarily menstrual bleeding. Just as little as a physician would consider a uterine bleeding in carcinoma uteri as menstruation, when the woman is long ago passed her climaxis, just as little have we the right to affirm that the menses set in at an irregular time during an attack of typhus, variola, cholera, etc. Virchow again shows that in pseudo-menstrual discharges the mucous membrane of the uterus is not only strongly swelled and hyperæmic, but, totally differing from the menstrual swelling, decidedly in a state of hemorrhagic catarrh, inasmuch as we find blood extravasations on the mucous membrane. From simple uterine bleedings such processes will also differ by the simultaneous changes in the ovaries. The latter are also full of blood extravasations, as we find them on the surface of the peritoneal coat. Solitary follicles are full of blood. Virchow never found them burst, and sees therein the characteristic difference between menstruation and pseudo-menstruation. Such bloody discharges during the course of severe diseases are met with in old women, as well as in children, and such atypic bloody discharges are usually less copious than the usual menstruation. Gubler puts these bleedings in febrile diseases in the same category with epistaxis, etc., which may also happen in the same diseases. Perroud (*Lyon Medical*, 16, 71) expressly states that in all such cases no ovulation takes place, and excludes them from genuine menstruation. Slaviansky (*Arch. f. Gynæc.*, iv, 285) studied these processes in regard to cholera, and shows that neither the changes in the ovaries nor in the uterine mucous membrane have any similarity to menstrual processes; he constantly found thickening and loosening of the mucous membrane, with considerable blood extravasations, all through the whole thickness of the mucous membrane, either leading to superficial destruction, or lying in the deeper layers of the mucous membrane; they caused a partial loosening of the mucous

membrane, which looked apparently healthy on the inner surface. Such a state easily produces contractions of the uterus, bloody discharges, etc. In some cases bloody extravasations were even found in the muscular substance of the uterus, and we deal here with a metrorrhagia caused by a hemorrhagic acute inflammation of the uterine mucous membrane. The state of the ovaries observed by Slaviansky in typhus, cholera, septicæmia, and other cases of acute poisoning corresponds to the well-known form of oophoritis parenchymatosa with blood extravasations.

Nowadays it may be taken as an axiom, that where the ovaries are wanting or not sufficiently developed, menstruation is never observed, and also where the ovaries are diseased or were extirpated, menstruation will in most cases cease forever.

We have now to study the connection between ovulation and menstruation. We find that the changes in the uterine mucous membrane at menstruation presents the beginning of the formation of the decidua. Pfluger puts up the hypothesis that by the continued growth of cells in the ovary a constantly increasing irritation is produced on the nerves of the ovaries. As soon as this irritation reaches a certain intensity, a strong sanguineous congestion sets in by reflex towards the sexual organs, an hypothesis which might explain the periodicity of the menstrual process, but leaves everything else unexplained. Since the changes of the uterine mucous membrane at the time of menstruation are now explained as a formation of a decidua, and since we know that there is only a gradual difference between decidua vera and decidua menstrualis, the question looms up, what happens to this swelled uterine mucous membrane when no conception takes place, when therefore the ovum becomes valueless? Dr. R. Sigismund (*Berl. Klin. Wochenschrift*, 52, 1871) believes that the swelling of the uterine mucous membrane and the discharge of the ovum from the ovary are two simultaneous processes, but the one quite independent from the other; that the swelling of the uterine mucous membrane may be always considered as the first stage of gravidity, for, if the ovum reaching the uterus is not fecundated, the swelled uterine mucous membrane passes away by retrogressive metamorphosis and is expelled as detritus, and this process in the uterine mucous membrane causes numerous lesions of the blood-

vessels, *i. e.*, the discharge of blood. The menstrual bleeding is thus a sign that the ovum of this period of ovulation is dead.

Loewenhardt (*Arch. f. Gynæcol.*, iii) explains that in calculating pregnancy we must not take the last period as the beginning of gravidity, but that the ovulum of that period, which failed to appear, always is the one fecundated. According to his calculations fecundation always sets in before the expected appearance of the flow, perhaps five to eight days before the courses which are expected. The fecundated ovulum reaches the uterus, finds the uterine mucous membrane in a state of swelling, the formation of a decidua, and nothing stands in the way of further development. The decidua menstrualis becomes now a decidua vera, and thus menstruation ceases during pregnancy. A menstrual discharge is, therefore, only possible when the ovulum was not fecundated. Kundrat's histological examinations confirm this view (*Striker's Med. Jahrb.*, Wien, 1873). He finds at the time of menstruation the uterine mucous membrane in a catarrhal state, acute swelling. At the time of the bloody discharge the superficial layers are in a slight state of fatty degeneration, and in the secreta we find numerous cast-off epithelia, elements of the glandular orifices, etc. These changes are not independent of the bleeding, but they are the very thing which lead to it. By the detrition of the superficial layer of the uterine mucous membrane a lesion is produced, and with it the bleeding. The menstrual congestion alone produces only the formation of the decidua menstrualis, the detrition of the decidua causes the bleeding. Analogous to it are the relations of the decidua during pregnancy, where the great hyperæmia alone causes no bloody discharge, but we meet the bleeding only at the end of pregnancy through the fatty degeneration of the decidua. The blood during menstruation is always found only superficially upon the mucous membrane of the uterus, corresponding to the fatty degeneration in the upper layers, whereby a great part of the glandular epithelium and superficial epithelium perishes. If the hyperæmia were the direct cause of the bleeding we would find more frequently blood extravasations in the deeper layers of the decidua. Reickert's careful studies (*Abhandl. der Acad. zu Berlin*, 1873), render it more than probable that the ovulum is only cast off after the formation of the decidua men-

strualis, and that the menstrual discharge appears only then when the cast-off ovulum is not fecundated. The connection between menstrual discharge and ovulation is, therefore, that the *menstruation is a symptom that ovulation has taken place, but passed off without fecundation*. Menstruation ceases with fecundated ovulation, and it must be therefore always considered as a sequela of superficial detrition of the decidua in ovulation without fecundation.—*Volkman's Klin. Vorträge*, 81.

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## ARTICLE X.—Glioma of the Retina.

BY GEORGE S. NORTON, M.D.

(Read before the New York Homœopathic Medical Society.)

THE rarity of this terrible and almost universally fatal disease of the eye, together with our want of knowledge regarding its causes, render a report of all cases observed necessary, in order that we may better understand its etiology, pathology, treatment, etc.

With this end in view I take pleasure in adding the following case to our literature upon this subject. To Dr. Dexter Hitchcock, who had the case in care from the time of operation till death, am I indebted for the correct report of the case during that time.

Willie A., age 3½ years, was brought to me in January, 1873, for an affection of the right eye. As his father could remain only a few minutes, and promised to come with the child on the following day, only a superficial examination was made, and no history of the case taken. At that time the eye appeared normal externally, no injection of the superficial vessels, pupil normal in every respect, only directly behind the pupil a *glistening, yellowish-white reflex* was visible, so characteristic of glioma of the retina.

The father neglected to bring the child, as he resided some distance from the city, until April 28th, 1873, when I made a more careful examination, and gathered the following history: At the time of birth the parents had noticed some trouble of the right eye, but paid no attention to it till the child was two years of age, when, upon testing him, they found that there was no vision in

that eye, and also noticed a "white spot on the sight," which seemed to be growing; they then, as I afterwards learned, consulted nearly all the first old school oculists of this city, who told them it was a "cancer of the eye," and advised its immediate removal; this they would not consent to, and so the disease went on increasing till the present time.

The father appeared healthy, but the mother was quite delicate and sick much of the time. Found out from a physician who had attended them that the "father had had *syphilis* before his marriage, and had given it to his wife," and that they had had one child younger than this one who had "wasted away and died a mere skeleton at the age of eighteen months."

*Status Præsens.*—The child is of light complexion, pale and delicate, though apparently very well; has a large head, and is very precocious and *irritable*, so that an examination is rendered quite difficult, owing to his dread of doctors. Moderate conjunctival and ciliary injection. The sclera above the cornea is thinned and bulged forwards; cornea clear. The aqueous humor is cloudy, and anterior chamber nearly half filled with pus (*hypopion*). Nearly the whole of the upper part of the iris has been absorbed or degenerated into pus, as it is not to be seen, but its place is filled by a yellowish-white mass, which appears soft and spongy from external examination. Has had only a little pain, and that recently.

Advised immediate enucleation. May 2d. Saw the child this morning again. Found that during the past three days has suffered from considerable pain in the eye and head whenever he raises his head; has some fever, is very restless, and appetite poor. Ether was now given, and with the assistance of Drs. Allen, Boynton, and Rounds, I extirpated the eye. No difficulty was experienced during the operation, and the child made a rapid recovery, so that it was allowed to be taken home in about a week, at which time the tissues in the orbit appeared perfectly normal and healthy, although was careful to tell the parents that the disease would probably return at some time, as I noticed upon removal of the eye that the optic nerve was swollen and involved in the disease.

After his return home all healed nicely, and the socket ap-



peared the same as after the extirpation of a healthy eye, until the 1st of September, when the boy took cold and had orbital cellulitis. After this had subsided there was left a small tumor about the size of a pea directly over the optic nerve. Its color was light and its surface perfectly smooth. Its growth was rapid and continuous. It soon filled the socket, turned with the other eye, and looked as if a new eye had sprouted up, and was covered with a thickened conjunctiva. It was still of a light color, and did not appear very vascular. At the end of September it had pressed the lids forward and held them there. It also protruded somewhat, and had become darker and more vascular. From its start the boy suffered from darting pains, more especially in his limbs, became very taciturn, and could hardly be induced to answer a question. He refused to walk unless a very short distance, it seeming to require too much exertion. His stomach seemed affected, and he vomited occasionally. He became restless at night, when the pains troubled him more. He received Arsenicum every night, and after taking it he almost invariably went to sleep. It, however, did not retard the growth of the tumor, and about the 1st of October he received Thuja. This, however, had no appreciable effect. There were no new symptoms, but all were constantly more and more marked. He wasted away, became more taciturn, and less inclined to move, vomited more frequently, and suffered a little more from the pain, though this was not very severe, except at long intervals. At the end of October the tumor was about the size and shape of a large hen's egg. He seemed constantly inclined to pick it, which caused frequent hemorrhages. Its color was now quite dark, and the bloodvessels extended to the very surface. November 9th (six months after the operation), the boy died, but seemingly without much pain. He had been unable to speak for three days, but seemed conscious of all that was going on, and could understand when spoken to. After death the tumor was sent me by Dr. H., when I gave it, together with the enucleated eye, to Dr. T. F. Allen for microscopical examination.

After the tumor had been hardened sections were made by Dr. St. Clair Smith, which, under the microscope, showed the characteristic appearances of retinal glioma, namely, an accumulation of small round cells, with scarcely any matrix, and supplied with

many thin-walled bloodvessels. The eye itself was also hardened in Müller's fluid, after which a section was made, passing through the centre of the cornea and optic nerve. A fine view of the tumor was now obtained, showing that it occupied fully three-fourths of the vitreous space, and was of a grayish, spongy character. Its origin was in the retina (which layer was not determined) a little below and to the inner side of the optic nerve entrance; from here it extended across the vitreous chamber, pressing its contents to one side, to the ciliary body in the upper and outer quadrants, which, together with the iris at this point, had become nearly absorbed, so that the tumor protruded slightly into the anterior chamber, the lower half of which was filled with pus. The optic nerve was thick and spongy, and showed that the disease had extended to it. The lens, as well as the iris and ciliary body on the inner and lower side, are seen intact. The sclera appears normal, except at the outer and upper portion, where it is thinned. The cornea is also seen thinned and bulged at the outer part.

As regards the etiology of this dreadful disease, all our text-books, and all the articles written upon this subject, as far as known to me, are sadly deficient. Knapp, who has written more and made more thorough investigation into this trouble than any other observer or writer, says in his work on *Intraocular Tumors*, page 110: "In relation to the immediate or remote causes of glioma of the retina, nothing is positively known. Trauma is mentioned as a cause; still none of the observations are exact. Wherever the trauma is indisputable, as in a case of Sichel's, the diagnosis is more than doubtful; and when the diagnosis is positive, the trauma appears to be purely accidental. If we search for it, we will not be at a loss to find in children a fall or a blow as the cause, especially as this affection never manifests itself externally in its early stage. Scrofulous constitution is also advanced as predisposing; this, however, is not confirmed by my own observations." Stellwag denies its ever being of a traumatic origin, or that it arises from any defective diathesis, as it generally appears in apparently perfectly healthy children. Wells states that in some cases it is clearly due to a traumatic origin, and also believes that it may be hereditary, but considers that the idea of

a dyscrasia does not hold good. Other authors are particularly silent on the etiology of this disease. And in no work accessible to me do I find hereditary syphilis given as a cause of glioma; but here we have a case where both parents have been known to have been infected, and where one child younger than this boy had wasted away and died in his infancy, evidently from this taint derived from the parents. So why cannot this have been the predisposing cause of the present fatal disease? Besides, there seems to be no other cause to which this may be ascribed; there has been no history of cancer or malignant disease in the family, there has been no trauma, and a strumous diathesis is also not especially admissible, so we are compelled to fall back upon an *hereditary taint* if we wish to account for the origin of this disease. How hereditary syphilis produces glioma we cannot tell, any more than we can how it produces other diseases, as interstitial keratitis, etc.; we only know that such is the fact.

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### YUCCA FILAMENTOSA.

BY S. P. BURDICK, M.D., NEW YORK.

ABOUT eight years ago I made fragmentary provings of Yucca, which clearly indicated its general action upon the alimentary canal, as well as the liver. Since that time I have used this drug very extensively in the treatment of hepatitis, icterus, gastritis, dysentery, diarrhœa, and the many ills growing out of derangement in the functions of stomach, bowels, and liver, with most happy results. From time to time I have communicated these results to quite a number of my brother practitioners, as well as the indications in my possession for the use of this drug, many of whom can testify to equally gratifying results in their hands.

For a long time I have been desirous of placing this drug before the profession in a way that would enable all to avail themselves of its service, and in order to do this, I offered a prize for the best proving during the session of 1874-75.

The proving by Dr. Charles E. Rowell shows, at any rate, its great value, and although, like Gelseminum, it was born with a breech-presentation, it will prove a boon in many a disease of the abdominal organs.

## General Record of Medical Science.

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*Physical Diagnosis of Interstitial Hepatitis, by Prof. Borelli (Naples).—*Borelli, who observed twenty-seven cases of interstitial hepatitis, of which sixteen were in the stage of hypertrophy, and eleven in that of atrophy, leads our attention to an important symptom in the diagnosis of hepatic diseases. He found that the enlargement of the liver taking place during the first period of this disease does not produce, as in other swellings of the liver, the dull sound on percussio heard low down in the right hypochondrium and epigastrium, but that the liver rather enlarges *upwards*, so that the absolutely dull sound begins on the fourth or even third rib of the right side, whereas the lower edge of the liver hardly passes the arch of the ribs. He also observed, that in the atrophy of the second stage the hepatic dullness decreases from below upwards; whereas the upper margin of the liver even where the organ is already greatly diminished, can be demonstrated at the third or fourth ribs.

These peculiar relations of the liver may find their cause during the first stage in the increased pressure upwards, produced by the meteorismus accompanying this disease, and by the softening of the hepatic part of the diaphragm, caused by the extension of the inflammation from the capsula hepatis to the diaphragm. In the second stage the ascites joining the meteorismus produces a high stand of the diaphragm, and the shrinking of the neoplastic connective tissue, especially at the lower edge of the liver and in the left lobe of the liver, causes the disappearance of the hepatic dullness over the right arch of the ribs and in the region of the xyphoid process.—*Rundochan*, i, 1875.

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*Arterial Transfusion and its Application to Frozen Parts, by Dr. Peters.—*Hueter shows that arterial transfusion to frozen parts, applied during the first twenty-four hours, may keep off gangrene. The icy-cold bluish part, without sensation already, as the foot turns red and warm again during a transfusion in the art. tibialis postica, instead of discharging, as formerly, when pricked with a needle, a lac-colored fluid, it gives now again arterial blood. During the course of the disease the toes become partly gangrenous, and Peters is of opinion, that the transfusion removed the line of demarcation from the base of the metatarsus to the toes. On the other foot, where transfusion was not performed, gangrene spread over the whole region which was already without sensation.—*Aerzl. Int. Blatt.* February, 1875.

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*Latent Gonorrhœa in Women, especially in Relation to Puerperium, by Dr. Emil Næggerath.—*Different diseased states of the female sexual organs, which were considered and treated as independent diseases, may be caused by gonorrhœa. The wife of any man, who at any time before his marriage suffered from gonorrhœa, may be considered as having latent gonorrhœa, which will show itself after some time in some form or another. It is wrong to believe that the removal of a gonorrhœa would leave no injurious sequelæ. The diseases which may be found as consequences of the infection, are acute recur-

ring and chronic perimetritis, oophoritis, and catarrhus genitaleum; they are the source of continual malaise, frequently the cause of early death, and often produce sterility. If pregnancy takes place, abortion follows or only one child is born by that woman, exceptionally two or three. Of eighty-one women whose histories he knows, only thirty-one became pregnant, and only twenty-three of them went their full time. Uterine diseases are too frequently nearly incurable from such a latent gonorrhœa. Although apparently cured, gonorrhœa remains in men and women during their whole life, although in a milder form; this latent gonorrhœa of either sex may produce in a healthy person all the symptoms of acute gonorrhœa. We ought to be more careful in permitting young men to marry who had a gonorrhœa only a little while ago, and who still have a purulent discharge. Such men usually infect their young wives, who suffer henceforth from constantly recurring menstrual disturbances, and should pregnancy take place, are liable to severe diseases. Cases where young and hitherto perfectly healthy women were a few months after their marriage attacked by severe chronic diseases, or died after an abortus from metritis or perimetritis, may be frequently explained by the presence of a latent gonorrhœa, which the poor wife caught from her husband. *Næggerath* is right when he points out the dangers of an operation with the idea of removing sterility caused by a latent gonorrhœa, and not by closure of the neck of the uterus. The injury of forced dilatation of the cervix in a woman suffering from gonorrhœa, may be attended with great danger. In regard to diagnosis, the leucorrhœa may be of secondary importance, inasmuch as there are great variations in quantity and color of the discharge; it is usually yellowish, mixed with pus, not transparent, flows from the os uteri, which is usually surrounded by a bright-red erosion of several lines in diameter. The uterus is mostly very sensitive, especially at the neighborhood of the entrance of the Fallopian tubes, which is easily found out when introducing the sound. Urethritis, present in the beginning of the disease, soon disappears. The vulvo-vaginal glands are enlarged, the vulva very sensitive; of special importance is the inflammatory catarrh of the Bartholinian glands.—*Schmidt's Jahrb.*, 10, 1874.

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*Parenchymatous Injection and Infusion of Carbolic Acid into Inflamed Tissues, by Prof. Charles Hueter.*—The action of carbolic acid (watery solution of two per cent.) consists, by immediate bathing of the inflamed tissues, in the destruction of the inflammatory irritants, and in the production of a globular stasis in the smaller vessels, in consequence of which the inflammatory process is stopped, and retrograde metamorphosis sets in.

Hueter either injects with the common Pravaz syringe or with his infusor, a graduated glass-tube of the finger, to which at its thinner end an india-rubber tube is attached, on which the piercing canula is fastened. The latter has numerous lateral openings, in order to inject the lymphatic vessels with more certainty. He never witnessed any evil consequences, either local or general ones. He usually injects one to two grammes of fluid at intervals of one or two days. In acute inflammations the pains cease rapidly. In six cases of erysipelas the fever nearly ceased after twenty-four to thirty-six

hours. In inflammations of the joints and bones good effects are certain; he injects the synovial capsule in inflammation of the joints, and in myelitis granulosa (caries), with or without the formation of a fistula, he pierces the softened cortical layer, and then injects into the bone. In hydrocele the serum must at first be carefully drawn off (in order to prevent coagulation), and then the injection made. At first there is hardly any reaction; towards the fourth day the testicle is slightly swollen, the skin of the scrotum becomes œdematous, but all these manifestations pass off in a few days with suitable compression. An operation for hydrops bursæ præpatellaris ran a similar course. Hueter is sanguine enough to hope that by such injections all inflammatory processes in the bones and joints may be suppressed at their very start, and he expects great benefit in the treatment of tumors.—*D. Zeitschr. f. Chir.*, iv, 5 and 6.

*How long does Hereditary Syphilis remain Latent?*—Kaposi (*Syphilis der Haut*, 2, 109): The presence of papules in nursing babies and in infants during the first months of their life may be considered as a consequence of hereditary syphilis, according to circumstances, as a symptom of the primary infection, at any rate as one of constitutional syphilis or as relapse; but when primary the papules must appear during the first three months of their life, and when constitutional a preceding morbid state must be proven during the first three months of life.

Reder (*Pathologie und Therapie der Venerischen Krankheitent*): Hereditary syphilis shows itself between the second and eighth week after birth. When children of syphilitic parents remain perfectly well after that period, we may conclude that the contagium did not infect them, and that no syphilitic disease will follow. Where syphilis breaks out months and even years after birth, we suspect with far better reason acquired syphilis.

Gerhardt (*Lehrbuch der Kinderkrankheiten*, p. 182): Where syphilis emanates from the father, it will be found developed at the birth of the child; when from the mother, it will show itself shortly after birth. We must be very careful in diagnosing hereditary syphilis in children who showed symptoms of this disease after the fourth week of their life.

Zeissl (*Lehrbuch der Syphilis*, ii, 304): Children which become infected with the syphilitic diathesis during their uterine life either show immediately at birth manifestations of syphilis, or they appear during the first days of their extra-uterine life. It may be possible that children of a father suffering from latent syphilis may be born apparently healthy, and remain so during their infantile life, but there appear gradually, on different places of the skin, gummous infiltrations, with simultaneous destruction of the soft palate and of the nose, osseous enlargements, etc., symptoms which too often are considered as manifestations of syphilis. Many authorities, therefore, accept a congenital syphilis, *i. e.*, such a one which manifests itself in utero or a few days after birth, and a hereditary latent syphilis, which shows itself at a later period of life, sometimes during adolescence. Where syphilitic symptoms appear in infants several months after birth, with symptoms like those we observe in the first stages of acquired syphilis, we of course consider such cases as syphilis acquired *per partum seu post partum*.

Eulenberg (*Berl. Klin. Wchschrft*, 89, 1872): Hereditary syphilis may remain latent for a longer period than three months.

Rosen (*Syphilidology*): Of sixty-eight cases observed in the lying-in asylum of Copenhagen, only nine were attacked after the end of the third month; nearly half of the children showed already symptoms during the first month; one-third during the second, about one-eighth during the third, and only one-eleventh after the third month.

Cullerier (*Iconographie des Maladies Vénériennes*, 1867): The first symptoms of hereditary lues appear in the first six weeks of life, or between the second and third month; from that time up to the end of the first year must be considered rare and as exceptions.

Joukoffsky (*St. Petersburg Med. Zeitung*, 1871): Of one hundred infants suffering from hereditary lues, 53.2 per cent. were attacked at the age of four weeks to two months, 15 per cent. during the first three weeks of their life, 15 per cent. during the third month, and 15 per cent. after three months.—*Berl. Klin. Wochenschrift*, 13, 1875.

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*On the Etiology of Erysipelas.*—Dr. Luehe communicates a series of cases where patients lying in the same ward were infected from a patient suffering from erysipelas phlegmonosum, and another time from one suffering from erysipelas faeiei. Neither a genius epidemicus can be considered, nor can the blame be laid to careless handling of instruments or to the fingers of assistants and nurses. He considers the air in the ward as the carrier of the infecting matter, and it was remarkable that in all cases the stage of incubation lasted three days.—*Deut. Archiv. f. Klin. Med.*, xvi.

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*On Cerebral Rheumatism, by Dr. B. Hall.*—There are two forms, an acute and a chronic one.

*Acute cerebral rheumatism*, which is usually introduced by a remission of the rheumatic articular affection, begins with symptoms of irritation. The patients are restless, talkative, with hallucinations, and even maniacal paroxysms. After awhile a general tremor sets in, like in delirium tremens (chorea form of cerebral rheumatism, Trousseau); diminished sensibility, so that the patient can execute the most severe movements with joints excessively painful a short time ago; high, sometimes even excessive temperature (43–44.6° R.) in the rectum, whereas the temperature in the axilla is relatively low.

These cerebral manifestations last for a longer or shorter time, a few hours to several days, and end with coma and death; the latter sets in sometimes very suddenly. Solitary cases may be cured, others take on a chronic course. From this meningitic form of the disease the apoplectic one differs, where the patients after short prodromata fall into a deep coma and die, with excessively weak pulse and high temperature. Autopsies either give a perfectly negative result or reveal meningitis or encephalitis, serous bloody effusions or purely serous infiltrations in the arachnoidea, in the ventricles, in the subarachnoidal spaces, in the sinus or dura mater, etc.

The *chronic form* (folie rheumatismale) usually begins when the affection of the joints has decreased or entirely passed off, with symptoms of irritation,

which gradually give way to a quiet delirium. The former may remain entirely absent, whereas in some rare cases a maniacal state may last to the end, though generally a state of apathy and of stupor is prevalent; the mental disturbances may take on different forms. These rheumatic mental affections have their peculiarities, by which they differ from similar affections, appearing in the wake of acute diseases. The patients are sulky and peevish, reply angrily to a question pleasantly given, and remain indifferent to joyous news. Suicidal ideas trouble them greatly, and they show a remarkable alternation between mental laziness and mental exertion. Characteristic are the hallucinations, especially those of hearing, more rarely those of sight; they see black spots, which they consider living beings; they see everything larger and in fantastic forms. Hallucinations of touch, of taste and smell, have also been observed. Other symptoms are: Rapid failure of the intellectual faculties, which may even be observed to a certain degree in cases cured; tendency to cachexia, emaciation, marasmus; convulsive, choreic, and tetanic phenomena (not constant); frequent complications with cardiac affections, which stand in the same relations to folie rheumatismale as to rheumatic chorea; alternation with articular manifestations.

A cure has been observed in about sixty per cent. of all cases of cerebral rheumatism, though even here intelligence remains weakened. The other cases ended in death or dementia. The duration of the disease oscillates between twenty days to three months; cases which last longer only allow an unfavorable prognosis. The number of male to female patients is as three to five; most patients are between twenty and thirty years; no patient was older than sixty. Hereditary disposition seems to play a considerable part in originating cerebral rheumatism.—(*Le Mouvement Médicale*), *Wien Med. Wchscht*, 11, 1875.

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*A Strychnia Eater—Strychnia an Antidote to Alcohol.*—Dr. H. C. Moray, of Gilroy, California, reports the following case in the *Pacific Med. and Surg. Journal*, April, 1875. The individual in question is a man of about fifty-two years of age, five feet five inches in height, and weighs about one hundred and fifty pounds. I first became acquainted with him in the fall of 1861, and soon learned of his habit of eating strychnia after a long and continued debauch and in a condition bordering on delirium tremens. The first time my attention was particularly called to it he wished me to give him a bottle of strychnia, which I did at night about bedtime. He took the bottle, pouring the strychnia in his hand and threw it into his mouth as carelessly as though it were salt, and in the course of half an hour, not feeling the effects of it that he wished, he repeated it, and continued to do so until he became perfectly sober. The quantity required would correspond to the length of time he had been drinking and the quantity of whisky he had drunk. I was struck with the wonderful effect it had to so completely sober him and leave his system so entirely free of any nervous disturbance, and without the reddened and bloated appearance of the face, the dull heavy eyes, and irritable stomach of the drunkard. After a two weeks' debauch, with all the appearance of approaching delirium tremens, he got up in the morning with his mind clear, his eyes bright, his skin clear and fair, and with all the appearances of a man



in perfect health and vigor, and ate as hearty a breakfast as usual, and went to his work as though he had never taken a drop of whisky in his life. My curiosity being excited, I began to question him as to when he commenced its use, but found him very reticent; all that he would tell is that he commenced its use in 1856. From 1861 to 1867 I saw him very frequently, and almost as often have I seen him take the strychnia, until it ceased to be a curiosity. Whether strychnia is an antidote to the alcoholic poison and *vice versa*, was a study for which I could find no authority to guide my conclusions. From 1867 I did not see him till November, 1874, when he came to this place and called on me for strychnia as of old. I told my clerk to give him a bottle full, from which he took about twenty grains. In an hour he was all right and sober as ever. I have experimented with Strychnia and *Nux vomica* as an antidote to the effects of alcohol, and invariably with benefit.

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*Lesion of the Cerebellum and Diabetes Mellitus.*—Prof. Mosler reports the following case, the point of which is that during life not one symptom pointed to its neuropathic origin, whereas the autopsy clearly showed a lesion of the cerebellum.

Passing by the anamnesis of the patient (thirty-nine years old), he mentions that the diabetes already existed for over two years, with the usual symptoms; dropsy followed, and in the last few weeks stitches in the thorax, so that he entered the hospital. The symptoms were the usual ones; but all the functions of the senses, and motility as well as sensibility, remained normal to the end. Death set in shortly after entering the hospital. Autopsy showed the white substance of the cerebellum abnormally colored and the bloodvessels hyperæmic. A decided focus of softening could be demonstrated at the nucleus dentatus of the left hemisphere, about the size of a pigeon's egg.—*Deut. Archiv. f. Klin. Med.*, xv, 2.

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*On the Use of Carbolic Acid in Cutaneous Diseases.*—Dr. Berndgen recommends the external use of Carbolic acid in chronic eczema. *R.* Acid carbol. cryst., 5.0; Spir. vin. dil., 10.0; Aqua dest., 120, the affected spots to be thoroughly pencilled over every morning and allowed to dry up. The patient may then follow his usual occupation during the day. In subacute eczema a watery solution is preferable, as the alcohol irritates too much the inflamed cutis; in some cases he prefers a solution of 2 per cent. Carbolic acid in *Ol. Olivarum seu Lini*, and has it softly rubbed in, or compresses soaked in it, applied over the affected places. He found this especially beneficial in eczema impetiginosum, which exist sometimes for a long time with constantly new eruption of small pustules. Intervals of several days are necessary in subacute cases, in order to find out whether the treatment is suitable to the respective stage of the disease. In eczema of the hairy scalp, whether it appears under the form of eczema impetiginoides or rubrum, or as pityriasis rubra, after cutting short the hair, the same inunctions with *Oleum carbol.* (Acid carbol. cryst., 1.0–5.0; *Ol. olivar.*, 100.0–120.0) may be applied. In acute eczema, as it appears on the face, Carbolic acid is far too irritating, and even after the acute stage is passed, the weakest liniment may be carefully tried. Psoriasis may be treated in the same manner.

In order to prevent all symptoms of intoxication, for the acid may be also absorbed through the skin, the eruptions on the trunk are only pencilled over on the first day, and after twenty-four hours these places are washed off with green soap, and the eruptions on the extremities pencilled and washed off twenty-four hours afterwards. This process is thus alternated till the patient is cured. No internal medication is necessary.

When psoriasis inveterata is limited to a few efflorescences, a more concentrated solution (Acid carbol. cryst., 2.5; Spir. vin. dil, Aqua dest., ãã 10.0) may be used, only we may not forget that such a concentrated solution may act as a caustic, and after using it once a day three or four times, it is advisable to omit it for a little while, as the epidermis becomes fissured, sore, and gradually scales off. As long as the affected spots do not appear at a level with the other skin, this procedure has to be repeated till we succeed in getting an even smooth skin, although even then it will show for some time a darker pigmentary coloring.

In prurigo the concentrated solutions are necessary, even to a solution containing five per cent. of the acid (Acid carbol. cryst., 5.0; Spir. vin. dil., 10.0; Aq. dest., 100.0). The epidermis exfoliates and regenerates itself quickly, the extremely annoying itching is stopped, and the patient feels grateful to be freed from his suffering. The general health never was disturbed during these external applications of Carbolic acid.—*Allg. Med. Central Zeit.*, No. 20, 1875.

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*Tuberculosis.*—At a discussion of the "Berlin Medical Society" on tuberculosis, Professor Langenbeck remarked the spreading of tubercle by contact may be observed in an analogous manner in cancers. When the carcinoma mammæ forms adhesions with the walls of the thorax, and, penetrating the muscles of the chest, reaches the pleura costalis, we usually find neither the pleura costalis nor pulmonalis affected, but under the latter we find carcinomatous nodules in the pulmonary tissue.

Dr. Lewin: If according to the latest investigations on tuberculosis we may affirm that from a cheesy focus, existing in any part of the body, resorption and infection of other parts of the body, especially of the lungs, may take place, our therapeia must consist in eliminating in toto such foci from the body, or, where this is impossible, to destroy its infectious qualities by disinfectants. We find this especially in the epididymis, cutis, and larynx. The epididymitis is a frequent complication of gonorrhœa, but the exudation is never totally absorbed, and in many cases, after resorption of the fluids, a palpable hard knot remains even after years. In some cases the inflammation passes into suppuration, in others a cheesy focus is formed, which finally breaks outwardly—tuberculosis of the testicles. The seat of such a cheesy focus is always ominous, inasmuch as it happens in a region well supplied with lymphatics, the carriers of cheesy masses. Early castration is, therefore, indicated in order to prevent tuberculosis pulmonum.

On the skin we find scrofulous, lupous, and tuberculous ulcers. A part of the lupous ulcers certainly are of a tuberculous nature, according to the latest investigations. Thus also a general disease may arise by resorption. It is well known that lupous patients hardly reach an age over forty, and that they

succumb to tuberculosis. Volkmann teaches that the lupous process on the upper extremities lead to tuberculosis, on the lower ones to parenchymatous nephritis, originating in cheesy detritus. Energetic local treatment is indicated, either by galvano-caustic or by escharotics, especially Carbolic acid.

The larynx, constantly exposed to atmospheric changes and mechanical injuries, and also on account of histological peculiarities, is constantly exposed to the formation of abscesses and ulcers. Especially the posterior wall of the larynx is often the point of deepseated ulceration, whose secreta flow down into the lungs, inflammation follows, ending too often in ulceration and tuberculosis pulmonum. Carbolic acid, by touching or inhalation, may do a great deal of good, and we may thus sometimes succeed in preventing this fatal disease. Where a cartilage is already ulcerated, we may expect a deepseated process of ulceration in the lungs.—*Berl. Klin. Wochenschrift*, No. 14, 1875.

*Craniometry of the Insane and of Criminals, by Ariszo Jamassia.*—The Doctor examined forty-one cranîæ of lunatics, and these results are compared with those obtained by Professor Lombroso on the cranîæ of criminals. From these researches it follows that the average cranial capacity is on an average, in lunatics 1399 c.c., in criminals 1389 c.c., and in healthy men 1552 c.c.

The average of the cranial capacity in the different forms of insanity are :

Monomania, . . .	1464	Mania, . . .	1422
Melancholia, . . .	1445	General Paralysis, .	1365
Pellagra, . . .	1429	Epilepsy, . . .	1350

The facial angle of lunatics averages 72.4. The degree of prognathism is still more marked in criminals, where it measures only 70.—*Chicago Journal of Nervous and Mental Diseases*, April, 1875.

*High Bodily Temperature from Injury to Spine.*—Mr. J. W. Teale read the notes of a case of supposed inflammation of the spinal ligaments, and possibly of the membranes, in which the temperature for weeks continuously ranged at 110° and upwards, and five times the index was buried in the bulb at the top, indicating over 122°, the extreme height of the scale. These high temperatures were not uniform over the body, a difference of several degrees frequently existing between the temperature of the axilla and the thighs, and sometimes when the readings here were highest, the hands, feet, and forehead were icy cold. After seven weeks of temperature never below 108° and rarely under 110°, it gradually returned to the normal figure. The only way to account for the phenomena seems to be to suppose local vaso-motor disturbance of the limbs, not extending to the centres.—*British Medical Journal*, March, and *Chicago Journal of Nervous Disorders*, April, 1875.

*The General Treatment of Parturition.*—Dr. W. Goodell, of the Preston Lying-in Hospital, follows a rational plan with his patients. When a woman falls into labor she has her bowels moved by an injection, and then takes a warm bath. The bag of waters is usually ruptured artificially, and the liquor amnii collected in a grocer's scoop. The second stage of labor is never allowed to linger; any delay is met by the use either of the vectis or of the

forceps. As soon as possible after the birth and the removal of the child the placenta is delivered by the Credé method. I may here remark that the still pulsating cord is first cut, then stripped of its blood and as much as possible of its gelatin, and finally tied, when it has ceased to bleed and has become flaccid. Neither belly-band nor any kind of dressing is afterwards applied, but the cord freely dangles about from the navel. Treated in this manner it dries up without any bad smell, and falls off like a ripe fruit, without leaving a raw stump. I am well satisfied that, by dispensing with the belly-band, I have fewer cases of inguinal hernia.

One teaspoonful of the fluid extract of Ergot is given as soon as the head presses upon the perineum. When the labor is over the perineum is examined, and, if torn, is at once sewed up with silver sutures. The patient is now washed clean, and a binder and cylindrical compress applied, the latter in the hollow just beyond the fundus of the womb. On the morning following the day of her labor the binder is removed for good, and she slips into a chair while her bed is making. Contrary to the generally held opinion that absolute rest after labor is indispensable, in no single instance has this muscular exertion (even immediately after labor) to roll over from the cot into her bed apparently brought about a flooding. It seems rather to condense still further the uterine globe. No woman is allowed to suffer from after-pains, as nothing acts so promptly as the exhibition of ten grains of Quinia every six hours, until the ears ring. Should the lochia become offensive, the woman is made to get out of bed and slip into a chair three or four times a day; this usually corrects the fetor, but if it does not, then and only then is a solution of potassic permanganate thrown up into the vagina. Firmly believing that the nozzle of a syringe may become the medium of virus communication from patient to patient, I avoid the use of vaginal injections as much as possible. The canonical purge on the third day is dispensed with. Bed-pans and urinals are also never used except in cases of positive illness, as the act of sitting on the ordinary chamber-pot often forces out putrid shreds or fetid clots.

(To most of these apparently novel features in obstetrics we say most heartily, Amen, amen! We only object to a too early rupture of the bag of waters, inasmuch as we consider it the best and most natural wedge in dilating the perineum, but we agree fully with this eminent obstetrician that the vectis and the forceps in skilful hands are the best oxytocic. Instead of using Ergot, we follow Grauvogl and give Arnica before and after delivery, and flooding is thus rarely observed. The binder, applied on the first day, may prevent fainting, which sometimes sets in soon after delivery, but we do without it nearly as well. Credé's method of placental delivery is certainly the most physiological, as it provokes a more complete involution, and certainly empties the womb of all clots, and squeezes it down to its smallest capacity. After-pains need not trouble a homœopath, nor will he trouble himself with that purge on the third day, as the milk-fever is now generally considered a myth, and the bowels having more room to move about are well able to take care of themselves, and by allowing the patient more exercise the bowels will move of their own accord. For after-pains we can beat Quinia and Morphia by our remedies, so well laid down in *Guernsey's Obstetrics*, p. 426.—S. L.)

*On the Physiological Action of Saponin.*—Dr. Herman Koehler made his experiments on frogs, dogs, and rabbits. Saponin (also called Struthin, Githagin, Onillagin, Senegin, or Monesin) is a glycosin found in numerous drugs of the families Silenæ (*e. g.*, *Saponaria officinalis*), Polygalæ (*e. g.*, *Polygala senega*), Spiræacæ (*e. g.*, *Onillaga saponaria*), Sapotæ (*Cortex mineræ*). It is an amorphous white powder, of neutral reaction and sweetish taste, soluble in water, forming a foaming solution like soap. He experimented on the local of this drug, especially by subcutaneous injection on the muscles and nerves of the extremities, on the exposed heart of a frog, on the intestines, and on the nerve-centres by direct application to these organs; injected it also in the jugular veins to observe its general effect, and then also per os. Locally applied, it produced for five minutes a total extinction of the reflex irritability of the part exposed; paralysis of the motory and sensory nerve-ends; rapid cessation of irritability of the muscles affected by the drug to any chemical, mechanical, or electrical stimulus—an effect partly independent from its action on the nerves. The nerve-trunks, and after them the nerve-centres, are only affected by the application of larger quantities of the poison, which is taken directly into the circulation. The capillaries at the place of injection contract considerably; also the larger bloodvessels, by direct applications; when directly applied to the heart, its frequency gradually declines, even to a perfect stoppage. When introduced into the stomach, blood-pressure, frequency of pulse and of respiration, and temperature slowly decreased; paralysis of the extremities set in, just as after injections into the veins; no change could be observed in the quality or quantity of the excreta. Clinical observation must decide whether Saponin deserves a place in practice as a local anæsthetic. Koehler considers this probable, although it would take larger doses in man, as in the animals experimented with, to produce its physiological effects, paralysis of the heart and of the centres of respiration and breathing.—*Med. Neuigkeiten*, No. 14, 1875.

*Heredity caused by artificially produced changes in the Nervous System.*—Brown-Séquard's experiments on animals prove that 1. Epilepsy appears in the young ones whose parents were made epileptic by injuries of the spinal cord. 2. Epilepsy appears in the young ones whose parents were rendered epileptic by division of the nervus ischiaticus. 3. Changes in the form of the ear are observed in such animals where the same change was caused in the parents by injury to the sympathetic nerve. 4. Partial closure of the eyelids is seen in animals where the parents suffered from the same state, either after injuring the nervus sympatheticus cervicalis or by the removal of the ganglion cervicale superius. 5. Exophthalmos arises in animals descendants of parents in whom, by injuring the corpus restiforme, the exophthalmos was artificially produced. Brown-Séquard witnessed this interesting experiment through several generations, and in some young ones there was exophthalmos of both eyes, although in the ancestor only unilateral exophthalmos had been produced by unilateral destruction of a corpus restiforme. 6. Hæmatoma and dry gangrene of the ear showed themselves in animals whose parents received an injury of the corpus restiforme in the neighborhood of the point of

the calamus. 7. Two or three toes were absent in animals where, in the parents, the toes were rendered anæsthetic by division of the ischiadicus or cruralis. Sometimes traces of toes were found in young ones, where, in the parents, not only the toes, but the whole foot was wanting. 8. Different changes of the skin and of the hair on the face and neck appear in animals whose parents offer similar changes in these parts, or which they received in consequence of injuries to certain nerves.—*Allg. Med. Central Zeitung*, Feb., 1875.

*Experiments on the Laws of Hereditary Influence.*—Dr. Obersteiner made three different experiments: 1. An epileptic male guinea-pig to a healthy female. 2. A healthy male to several diseased females. 3. Both parties affected with epilepsy. All the animals had been rendered epileptic by division of the nervus ischiaticus. Two of 26 young ones were epileptic; 10 seemed normal; 8 were born very delicate, and failed in their further growth; 3 were paralyzed in the hindquarters; and 3 showed a peculiar dimness and ulceration of the cornea, which may be considered a trophic disturbance. These 3, with 8 healthy ones, came from the first breeding, and they were the only ones who in their color looked like their male parent, whereas the healthy ones showed no such similarity.

We may make the following deductions: 1. Acquired accidental deformities, with their sequels, can be inherited by the children. 2. The law of variability in the transfer of nervous disorders, inasmuch as they may appear in a different form in the young ones. 3. The law of prevailing paternal or maternal influence.

*Hydrate of Chloral in Tetanus.*—Dr. Mascaro treated two cases of severe traumatic tetanus with Hydrate of Chloral, even to gramme *pro die*, and cured his patients in a relatively short time. He also uses it prophylactically with success where there is danger of tetanus.—*Gaz. Med. de Paris*, Août, 1874.

*A Diseased Sympatheticus in Unilateral Perspiration.*—In a case of hyperhydrosis of the left side of the head and trunk and of the left upper extremity, Dr. W. Ebstein found in the sympathetic ganglia of the left side, especially in the lower cervical ganglion, round and striated particles of the size of millet-seeds, and of a brown-black color, showing themselves under the microscope as hollow spaces filled with epithelium and blood-corpuscles. He considered them as varicose dilatations of bloodvessels, which, especially with an increasing hyperæmia, compress the nervous elements of the ganglion, and thus cause paralysis.—*Virchow's Archiv*, vol. 62, 3.

(Of our remedies, *Baryta* and *Cinchona* cause left-sided perspiration, hence these remedies must act on the sympatheticus of the left side, just as *Phosphorus* and *Pulsatilla*, by curing hyperhydrosis of the right side, must affect the sympatheticus of the right side. Buchner (*Morbus Brightii*, p. 67) clearly shows the action of Phosphorus on the right side.)

*On Salicylic Acid.*—Dr. Stephanides used this remedy in a case of dysentery and in chronic diarrhœa. Many authorities consider dysentery a diphtheritic

process of the lower part of the intestinal canal. He used it internally and mixed with starch injections, fifteen grains to an injection. The chronic diarrhoea ceased after four days, though many remedies had before been given without any benefit.—*Wien Med. Presse*, 14, 1875.

*Diabetes Mellitus*, by Dr. Seegen. Berlin, 1875.—A short résumé of this work may be thus given :

1. With our present chemical and physical instruments we are unable to prove sugar in healthy human urine, and we may therefore say, healthy human urine contains no sugar.
2. Every excretion of sugar with the urine, not momentary from transient causes, but steadily present, is the expression of a morbid process in the organism.
3. The distinction between diabetes mellitus as disease, and mellituria as an innocuous increase of a physiological process, does not hold good; even the most moderate excretion of sugar, when steadily present, may produce all morbid manifestations characteristic of diabetes mellitus.
4. The excretion of sugar is the consequence of an anomalous change of the hepatic glycogen into sugar; a direct discharge of the sugar introduced with the nutritive material does not take place.
5. There are two forms of diabetes, according to the source whence the glycogene emanated; (a) that form where only the glycogene formed from hydrocarbons is changed into sugar; (b) that form where also the glycogene emanating from the dissolution of the albuminates is changed into sugar. In the first sugar is only excreted when hydrocarbons are introduced; in the second form sugar will be detected though only animal food is taken.
6. The cause of the anomalous alteration of the nutrition will be found mostly in morbid changes and disturbances of the central nervous system.
7. Whatever may be the proximate cause of the formation of sugar, this only is the cause of all the symptoms characteristic of diabetes mellitus.
8. There is a peculiar connection between a superfluous formation of fat and excretion of sugar. Fat persons frequently suffer from diabetes. Sometimes and especially in young persons the production of fat may be considered as the prodromal stage of the consecutive severe diabetes.
9. The symptoms of diabetes may be divided into two groups, (a) in such caused by the presence of sugar in the blood, *i. e.*, in the fluids of the tissues, and (b) in such caused by deficient nutrition in consequence of anomalous changes in the nutrition.
10. The liability of the tissue is never the cause, but always the sequence of diabetes mellitus.
11. Heredity can often be proved.
12. Its course differs according to the form. It will be a mild case where the sugar is only excreted at the cost of the introduced hydrocarbons. It is very favorable as long as we meet a considerable tolerance for amylacea. That form where sugar is made at the cost of albuminates, leads far quicker to a fatal end.
13. I never saw diabetes cured in that sense, that amylacea could be taken in large quantities and yet no sugar excreted.
14. The prognosis depends (a) on the form of the disease; (b) on the age of the patient; (c) on the ability to take up large quantities of animal food; (d) on mental qualities.
15. In treating diabetes the regulation of the diet is the first and most important factor.
16. Alkalies and alkaline mineral waters are the only remedies so far which deserve any confidence.
17. The use of *Carlsbad* acts always favorably on the symptoms of diabetes. In severe cases

it fails to influence the excretion of sugar, but it acts well in lighter cases. Carlsbad can be recommended in all cases where there is still a tolerance for hydrocarbons. 18. Opium and its preparations show a decided influence on the excretion of sugar. Even severe cases are benefited by it, but this beneficial action is only exceptionally of some duration.

*Treatment of Varicose Veins.*—Dr. Toland stated at the meeting of the State Medical Society of California his experience in treating varicose veins, declaring it to be his belief that in every case cures can be effected by the use of perchloride of iron, two ounces to six of water, applied by means of pledgets of lint placed lengthwise along the vein and secured by a roller. The blood gradually coagulates within the vein. In one week the vein gets firmer, in two weeks it gets hard, and the cure goes on steadily. He wanted the fact generally known, as the remedy was easy and the cure sure.—*Pacific M. & S. Journal*, May, 1875.

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## Reviews and Bibliographical Notices.

*Transactions of the Twenty-seventh Session of the American Institute of Homœopathy, held at Niagara Falls, June 9th to 12th, 1874.*—A bulky volume of nearly nine hundred pages, which at any rate shows that there are enough working bees in our hive to keep us from stagnation. It is a curious fact, by comparing several volumes of our Transactions, that we find year after year the same physicians as contributors to the Transactions and the same names as participators in the discussions. We have taken the trouble of finding out the home-standing of these physicians, who find time to attend these meetings, and our espionage shows that they are standing in the front ranks of the profession, that their practice is a most lucrative one, and still their patrons are willing that they should make that pilgrimage to the shrine of St. Hahnemann year after year, knowing full well that this yearly Sabbath-rest is necessary to the man to whom they intrust their all in all, the welfare of the family.

Of six thousand homœopathic physicians only about nine hundred are members of the Institute, not one-sixth of our physicians, and of those only two hundred and six attended the meeting of the Institute. Excuses are plentiful, but every member should consider it a sacred duty to be present at the yearly meeting, and the "experience meetings," as Ludlam so well characterizes them, would amply pay for the outlay of time and money.

We need not feel ashamed of our Transactions, they show real genuine progress—a progress of which father Hahnemann would be proud, for there never lived a more progressive spirit than he was; necessarily so, as reformation and old fogyism are as opposed one to another as the light of day is to the darkness of night. Hahnemann never considered himself infallible, as some of his disciples do, and if he were alive to-day he would utilize for his beloved homœopathy the progress made in the science and art of medicine, of which the nineteenth century may well be proud.



Page 156 we find the Report of *Materia Medica*. How delighted Hahnemann would be with these provings of *Physostigma* and *Hamamelis*, but he would point out that in the former classification was neglected, and that we failed to elucidate the cause of the action of these remedies; in collecting the symptoms experienced by many provers we ought to be able to point out a centrum, a sum as it were, from whence all other symptoms radiate. Father Hahnemann would also be highly pleased with the labors of our friend J. P. Dake, knowing full well how this close student has the welfare of homœopathy at heart; that he yearns for a *Materia Medica*, pure, freed from all defects, enriched by labors and experiments, unknown years ago, and that the only difference in opinion exists in the "how it could best be accomplished."

In the Report of Clinical Medicine, page 325, we would wish our readers not to neglect that excellent paper of B. W. James on "The Effects of Meningitis Cerebro-spinalis upon the Heart," and the case of spontaneous hydrophobia, by O. P. Baer. They well repay perusal, and in the latter case the magic action of Hydrophobin was a well merited reward to a faithful student of the *Materia Medica*. Never mind, Horatio, there is a great deal yet to come, of which we never dreamed of in our philosophy. In the discussion, following the reading of the papers, Dr. S. R. Beckwith forcibly remarked that the chances for relieving a patient suffering from meningitis cerebro-spinalis are almost exclusively confined to the stage of congestion, and thus the beneficial, local, and internal action of Gelseminum is easily explained. "Post hoc is not propter hoc," says our spirited friend T. L. Brown, but by reading the pathogenesis of Gelseminum we find it to be a close simile to the congestive stage just as the snake poisons are to the later stages.

Page 371 follows the report on obstetrics and the discussion during the "experience meeting." Puerperal fever remains a hard nut to crack, and "cleanliness is next to godliness" ought to be inscribed over the portal of every lying-in asylum. Every physician ought to read carefully the excellent paper by Prof. Sanders and carry his rules out in the lying-in room. Prof. Gause speaks in the same strain, and deserves credit for the openness of his remarks.

We cannot understand the issue which Dr. T. F. Allen raises on the employment of *Acon.* and *Veratrum viride* according to the pathological and tissue lights (p. 344). If our learned friend will read the late works of Schroeder, the monograph of Spiegelberg, and of other German writers, he will find that there is nothing specific in puerperal fever (Schroeder's *Midwifery*, 331), and that during an epidemic of puerperal fever *phlegmonous erysipelas* is easily developed, and the whole pathological anatomy of puerperal fever shows septic inflammatory states (lymphangitis, parametritis, peritonitis). What is diphtheria, by some called *diphtheritis*, and is every pneumonia (lung-fever) a pneumonia crouposa? Professors Meigs, of Philadelphia, and Alonzo Clark, of New York, and many members of the French Academy of Medicine, consider puerperal fever an inflammation; others consider it analogous to traumatic fever with septicæmia. Dr. Allen will, therefore, excuse me when saying that pathologists and tissue men are correct in their application of aforesaid remedies to puerperal fever, especially as they also have the symptoms on their side.

We must here again differentiate the stages, and *Veratrum viride* will be found as applicable to the congestive state, before the blood is thoroughly poisoned, as we saw *Gelsemium* indicated in the congestive state of meningitis cerebro-spinalis.

Page 437, 155 pages on surgery; page 721, 75 pages on ophthalmology and otology. Two chapters in which we acknowledge our deficiency, but we feel proud that our ranks contain physicians who are *au fait* in these specialties, and who may be trusted in any emergency.

Page 601, Report on Anatomy and Physiology. Thomas, of Philadelphia, and Gottschalk, of Providence, contribute valuable papers on the physiology and pathology of the lymphatics. Our friend, Buck, of Cincinnati, is here on his favorite subject, and we are glad to see that he intends to continue his observations in the *Advance*. Will it be considered a misdemeanor against strict homœopathy if we try to find out which of our remedies are characteristic in their action on the lymphatic system? Wilson speaks from our very soul when he remarked, "I hope that more of our physicians will cease to devote themselves exclusively to dealing out powders and pills, and comprehend that they are called to higher things, even to the investigation of these all-important subjects."

Page 651. Poor Frost! Requiescat in pace! We can hardly spare thee, for there are few in our ranks with so much erudition. Psychological medicine was one of his favorite studies; let us study his article on "Mental Diseases in relation to Homœopathy" as his last will and testament, and let us faithfully carry out the instructions which this great but too modest teacher has laid down for us. Let us again be thankful that Father Hering is still spared to us, for in his "Analytic Thorapeia" he teaches us how to cure mental diseases.

We disagree with the value of nosology, as laid down by Dr. Foote. All classification has been discarded by some of our latest writers; there is only one disease, "*mens insana*," with its varieties and stages. It simplifies the subject, and for the treatment in the asylum, as well as in private practice, strict individualization is necessary for a cure.

We have already overstepped the space allotted to us by the printer, or else we would enlarge yet on the interesting subjects of "post-partum hemorrhage and cholera infantum."

Nine hundred pages of valuable and instructive reading matter! And all this free to the members of the Institute for the paltry sum of five dollars! It is a shame that there are so many physicians who withhold their personal influence, for even the least of us ought to contribute his share for the benefit of all.

S. L.

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*Encyclopedia of Pure Materia Medica.* By T. F. Allen, M.D. Vol. II. *Aurum* to *Carduus mar.*—The publishers, Messrs. Boericke & Tafel, deserve our thanks for the promptness with which this second volume appeared. We have not time enough to give it now such a review as this work deserves; in fact we leave it to abler hands, and hope that C. D. will continue his valuable criticism in the pages of this quarterly.

## Miscellaneous Items.

### EDITORIAL.

IN a notice of Allen's *Encyclopedia of Pure Materia Medica*, in the May number of the *North American Journal of Homœopathy*, I asked why Dr. Allen had directed the tincture of *Actæa spicata* to be prepared "from the root obtained in the fall;" whereas, though the prover, Petroz, says nothing about it, all the pharmacopœias direct the root to be gathered "in May;" and I expressed the hope that, having probably a good reason, he would communicate it to the profession.

In reply to this, Dr. Allen has sent me the subjoined notes, which, it seems to me, fully justify him. C. D.

Hoffman, *Chem. annal. ermittelungen des Aconitingehaltes*, etc., Diss. Ras-tock, 1865, found Aconitin:

Fresh herb in June, . . . . .	0.14	Dried, 0.76 per cent.
" " " (10 days later), . . . . .	0.20	" 0.98 "
" " at beginning of flowering, . . . . .	0.21	per cent.
" " while flowering, . . . . .	0.24 and 1.12	per cent.
" " after " . . . . .	0.25	" 1.20 "
" " beginning of November, . . . . .	0.25	" 1.10 "
In the stalks in November, . . . . .	0.38	per cent. of dried herb.
" leaves " . . . . .	0.86	" " "
" root-stalks " . . . . .	0.92	" " "

Roots from gardens contain, before flowering, 1.03 per cent.; during and after flowering, 1.20 to 1.13 and 1.10 per cent.

Zinoffsky, in *Dragendorff Die Chem. Werthbestimmung*, etc., St. Petersburg, 1874:

Acon. Stärkeanum, leaves, June 8, 0.16 p. c. alkaloid in fresh herb.			
" " stems, " . . . . .	0.11	" " "	
" " flowers, " . . . . .	0.34	" " "	
" " leaves, July 26, 0.27!		" " "	
" " stems, " . . . . .	0.27!	" " "	
" " flowers, " . . . . .	0.72!	" " "	

Lefort, *Journ. de Pharm.*, xv, 1872, finds that the leaves of *A. belladonna* contain more *Atropine* after flowering; the cultivated plant as much as the wild; the roots double the amount of the leaves.

Roots of annual plants should be dug just before flowering (with many exceptions, it is even doubtful whether this will hold as a rule).

Roots of perennials should always be taken late in the fall, or VERY early in the spring, just as vegetation first starts.

Perennials should be two to three years old, especially roots; as regards leaves, it is well known that the two-year leaves of *Digitalis* are much more active than the leaves of the first year.

Rhubarb, four to five years; asparagus, three years.

ACTÆA SPICATA IS A PERENNIAL!

The pharmacopœias are all mistaken and inaccurate.

NORTH AMERICAN  
JOURNAL OF HOMŒOPATHY.

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**ARTICLE XI.—*Similia Similibus Curantur.***

AN ESSAY ON THE SCIENCE OF HOMŒOPATHY.

BY MARTIN DESCHERE, M.D.

THE scientific researches of our time tend to the elucidation of what the *weak power* can do, and the results of their researches are a rich reward of the most beautiful discoveries. The results, arrived at in the departments of physics and chemistry, in histology, microscopy, physiology, etc., justify the question, whether homœopathy has any affinity to the discovery of cell-development and molecular motion and force, as to consider the cause whereby our remedial potencies act. And surely there can be nothing wrong in considering the cause of their action.

Let us, therefore, attempt at any rate the solution of this question; let us endeavor to convince our opponents that the beneficial action of these infinitesimals has the same right to appear before the tribunal of science as other discoveries of the physiological school; let us prove by the investigations and deductions of that very school, that their adherents give us the foundation to homœopathy, and that the revelations of the startling phenomena, based on the action of infinitesimal factors, prove indisputably the truth of that homœopathy, which foolishly the old school derides by day, and calls it superstition, moonshine, and quackery.

*Spectrum Analysis and Homœopathy.*—Herschel remarks in his *Compendium*, p. 67: A reflecting mind cannot be satisfied with the mere fact that diseased conditions are cured by remedies producing similar diseased conditions. We try to find out the cause in order to gain an insight in the rationale of our action. We still trust that a solution will be possible.

So far all explanations have failed in satisfying the scientific world, and this apparent mystery is the cause that homœopathy has as yet failed to be acknowledged. But let us consider other processes in nature, offering similar manifestations, the truth of which are acknowledged by the scientists of all nations; what reason could then be adduced in acknowledging the same manifestations in one case and in ignoring them in the other. They have adopted the one series, they will yet be forced to acknowledge the other.

Nobody doubts at this day the laws and manifestations of spectrum analysis; we intend to prove that their only foundation rests on the axiom, *similia similibus curantur*. We do not care whether hypercritics ascribe the cause to radial absorption or to neutralization, the phenomena are the same, and the fundamental law cannot be ignored by mere skepticism.

To prove this proposition we must observe, as it was done at the first application of spectrum analysis, that the spectrum of a solar ray transmitted through a prism on a reflecting wall, gives us the rainbow colors, running one into another, interrupted by black lines, the so-called "Frauenhofer's lines." We know that these lines are only the effect of those bodies which, burning up in the heat of the sun and projecting their own spectra simultaneously with that of the clear sunlight, extinguish, annul, and neutralize all the peculiar shades of color of the latter. To elucidate this more plainly, let us transmit the pure spectrum of an electric light which best shows without interruption the delicate shades of color on a reflecting wall. Let us then interpose between the spectroscope and the electric light an incandescent body, *e. g.*, natrium, which of itself gives the characteristic yellow lines on the spectrum, and what do we see? certainly no increase of the yellow color on the electric spectrum which interferes in our experiment with the natrium spectrum, but (as Kirchoff discovered to his as-

tonishment) the yellow light which was present disappears at those points on which the natrium spectrum falls, and instead of them are only black lines; in other words, the yellow electric light is neutralized and annulled by the yellow natrium light, *an abolition of a similar by a similar*, SIMILIA SIMILIBUS CURANTUR.

Now to our law of cure. Let us consider the healthy human organism as the reflecting wall; a ray from any cause whatever will produce no particular change, and the ray, as received, will be thrown back again. But if we interpose between the noxa causalis, giving off the rays and the reflecting organism a prisma, here the predisposing cause, we find the intercepted rays cut up into peculiar colors, which we might call the "spectrum of morbid symptoms." How then do we extinguish and neutralize the morbid picture thrown on the organism? Certainly by interposing the symptom spectra of such organisms on the body, which *per se* produce similar manifestations already known to us. This is done, and the necessary result follows. Fraunhofer's lines appear, and their number will be the larger the more similar the symptom-spectrum of the remedy is to the natural one, until the similimum covers the entire present symptom-spectrum, and the natural as well as the artificial disease disappears. Is this anything else but neutralizing a similar by a similar, *similia similibus curantur*?

(The question arises whether it is not our duty, when we do not know the similimum, but where we see the colors of a second remedy known to us, with the colors of a remedy already selected, to give both remedies, in order to neutralize quickly and safely the natural spectrum by two artificial ones. We know very well that Lutze's theory, or alternation of remedies, is not looked upon with favor, but still cases may happen where, to some physicians, even such procedure may be necessary, and therefore in order.)

It is perfectly natural that the action of prophylactic remedies obeys the same law, only in a reverse application. Here the ray of the artificial cause is at first thrown on the organism. Where a predisposing cause is present as prisma, the later-appearing ray of the natural cause produces only Fraunhofer's lines. Where a prisma is present, both causes pass off without leaving any effect, as we see daily in vaccination and revaccination, so that where

vaccination fails repeatedly, the patient is, in most cases, not sensitive to the germs of variola.

May, therefore, our opponents either ignore spectrum analysis, and declare it a scientific humbug, or put homœopathy, based on the same law and offering the same phenomena, on the same honorable level. *Incidit in Scyllam, qui vult vitare Charybdim!*

Tyndall shows us, in *Heat as a Mode of Action*, that the phenomena of spectrum analysis are based on molecular motion and radiation. These radiations are, according to Tyndall, the vibrations of a medium, caused by the movements of the molecules of the body. These vibrations always continue in a straight line, except when a good conductor, leading them off from their own way, makes them follow the course of its own form.

Such conducting media are, *e. g.*, vibrating particles of ether in rays of light; vibrating particles of air in waves of sound; vibrating particles of metal in electrical or magnetic currents; oscillating fibrillæ of nerves in manifestations of human or animal will or thought (which, according to Huxley, are only molecular movements of the brain), etc., etc.

The peculiar qualities of bodies are to us neither present nor conceivable without the presence of these media put into vibration by the molecules of the acting body, for in the dark, *i. e.*, without ethereal vibrations, a body has for us neither form nor color. In space devoid of air the bell fails to give a sound, because no particles of air are present for vibrations. For the perception and apprehension of thought a whole chain of such media is necessary, and it could not be conceived, even if only one link of that chain were wanting; it consists of the vibrating nerve fibrillæ of the vocal organs of the speaker, of particles of air between speaker and hearer, of those in the tympanum, ossicula auditoria, acoustic nerve, etc., etc.

Let us again consider the law of similarity in relation to this doctrine of sound. We find that whenever a sound is given off from a good piano, that all the strings of the different octaves, having the same note, also reverberate. This reverberation only takes place by the vibration of the molecules of air and of the sounding-board. We might be asked, why the vibrations of these media left the intermediate strings untouched, and the answer is plain,

the law of similarity allows action to the vibrating media only on those strings whose sound is similar to the one which gave the accord.

Two conditions are, therefore, necessary to produce action of a body on our organism: 1. The free motion of the molecules of the body itself; 2. A medium put into vibration by these motions.

Understanding this much, all the mist hanging over the question of doses vanishes. What is a homœopathic dilution, what a potency? They are distinctly antithetic one to another, and the latter begins where the former ends.

What do we use to produce the action of a remedial agent on our organism? We say again, free molecular motion and conducting media. We fulfil these conditions by trituration with indifferent substances, for Tyndall proved that trituration is one of the most powerful methods to produce molecular motion. We thus not only put all the molecules in motion, but we also simultaneously increase the distance between them more and more—we increase surface-action. Every neophyte in chemistry knows that, *e. g.*, platina in a fine division, *i. e.*, spread out over a great surface (platina-sponge) is able to absorb an extraordinarily large quantity of oxygen; still more finely divided (platina-black) this quality increases to such a degree that it is capable of absorbing eight hundred times its own volume of this gas.

Our triturations and dilutions (shaking up a fluid is trituration) have, therefore, only the purpose to produce molecular motion with a very extensive surface-action. *But there is a very speedy limit to such work.*

Let us suppose that a grain of Sulphur contains a million or a billion of molecules (and there are hardly more), and to all appearance the *matter* is used up with the sixth dilution, even if we succeeded in spreading out the necessary number of molecules to their fullest extent in our triturations or dilutions. But this must cease, for where no more sulphur is present there can be no further dilution, and still we know from actual experience that the 7th, 30th, 200th, 1000th potency, and even yet higher potencies, give us by far the most characteristic symptoms of Sulphur. As we cease to dilute we begin with our potencies. In other words, after fulfilling the first conditions in the action of a drug by trituration



or dilution, we progress now to carry out the second one, *we give out the medium by whose vibrating particles the sulphur molecules may produce their specific properties on the organism.*

Here, again, the spectrum analysis offers us an analogue; for the finer the cleft in the spectroscope the more distinct the spectrum, and the higher the potency the more characteristic the symptoms. Hence we may conclude that it is neither the matter in spectrum analysis nor in homœopathy which produces spectra on the one side and combinations of symptoms on the other, but that this is done by the media put into vibration by the easily working molecules, ether-particles on the one side, particles of water, sugar, alcohol on the other side.

There is no need of a force liberated from matter as it was formerly thought necessary; we have nothing to do with an infinite divisibility of matter, with dynamization. Even Hahnemann's explanation, that insoluble matter becomes soluble after the third centesimal trituration (we would like to see the proof) is entirely wrong, and it is far easier to show that the molecules, at such a stage in vigorous motion, use the vehicle as a conducting medium to produce their full action. All other explanations, contradictory to well-known natural laws, lead astray, and have done immense injury to the spread of our school; the action of a potency can only be explained by the same manifestations as we meet in similar processes. Take, for example, the well-known fact of the magnet. A piece of steel becomes magnetic by being drawn through an electric hollow cylinder of copper wire.\* This magnetized piece of steel imparts the molecular motion received from the electrical copper cylinder to a second one, this to a third, to a fourth, fifth, and so on *ad infinitum*. Here is neither force without matter nor matter without force transmitted from one body to another, but the whole procedure rests on molecular motion through conducting media. The magnetic power thus aroused is just as firmly fixed in the steel as the remedial one in the alcohol,

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\* We purposely do not choose the rubbing with the natural magnet in order to take from critics the objection of homogeneity of the matter, as in the magnetic iron-stone and the piece of steel in contradistinction to the dissimilarity of drugs and of our vehicles.

merely by the now specific motion or vibration of the respective molecules.

Thus we distinguish between dilution and potency, but we find it impossible to fix a limit between them, inasmuch as the potentiality of the one may begin with the second dilution, and in another remedy after the sixth or tenth dilution. At any rate *the specific action of a drug on the human organism is only possible in the potency*, and it is a gross error to believe that dilutions or mother tinctures act on the organism by direct contact of matter of their molecules; we must never forget that without a conducting medium no such action is possible, and that here the tissues lying between the point of contact and the diseased surfaces may take on themselves in a moderate way the place of a conducting medium.

The consideration of dilutions and potencies from such a standpoint leads us involuntarily to Grauvogl's nutrition and function remedies. This author also draws a dividing line between high and low, but in another sense. He says, in his text-book (ii, § 343): "When we have to deal especially with functional diseases the higher potencies are indicated; low dilutions are indicated for the cure of modifications of nutrition. We cannot expect much from nutrition-remedies in high dilutions, where functional-remedies act so promptly;" and in another place he remarks, "that a drug acting in a low dilution as a nutrition-remedy may become in a high potency a functional-remedy," or we may reverse the order and say that we cannot expect benefit from a nutrition-remedy in a high potency, for in fact there is no such thing as a nutrition-remedy in a high potency. Even such a high authority as Grauvogl seems not to be quite clear on this point.

What is a nutrition-remedy? We consider it only a sort of fertilizer, and by no means a homœopathic remedy. By prescribing it we do not intend to cure homœopathically, we intend only to carry in an easily assimilable form, and in a free molecular state, as it were, that matter into the body which it needs for the structure of healthy normal cells, and which from some cause or other is just now pathologically deficient.

Although in such a case a nutrition-remedy may be considered a fertilizer, still we must not think it advisable to give it in inor-

dinate quantities ; on the contrary, the first, third, or sixth decimal dilution suffices for our purpose. The farmer carries out the same principle when he adds the different salts to the soil ; he never uses them by immense quantities, for experience has taught him that these salts, largely diluted, are far more quickly and more thoroughly absorbed by the soil. (*Liebig's Chemical Letters*, No. 40, 1839.)

As we do not propose a homœopathic cure by such means, it is also clear that we do not need any radiation of media nor potency ; a dilution suffices to make up the deficiency found in the organism.

We are fully convinced of the axiom : According to the law, *similia similibus curantur*, a cure is only possible by a potency, be it the third or thirty-thousandth.

The question, whether a low dilution or a potency is indicated, *pathology* alone can decide, inasmuch as it teaches us whether the organism needs fertilizing with a nutrition-remedy in a dilution, or a homœopathic functional cure with a potency.

Everything else, as *e. g.*, that dilutions act better in acute diseases, and potencies in chronic diseases, is mere speculation, and a prejudice which might lead the physician to false views and inappropriate treatment.

We have seen so far that the manifestations of spectrum analysis and of homœopathy, both following the law of similarity, are based on molecular motion and radiation of media ; that we have to know exactly in one case beforehand the specific spectra of certain bodies in order to understand the phenomena of Fraunhofer's lines ; and in the other case the specific symptom-group of certain drugs in order to remove the disturbances appearing in the organism.

Hence follows that the proving of drugs on the healthy is not only an innocent toy, as some of our opponents sneeringly call it, but an absolute necessity before its application in disease. The physician must be well acquainted with the manifold symptom-spectra of the drugs in order to know *a priori* on which tints of the disease Fraunhofer's lines may appear. That there are cases in which, by the administration of a drug given for the removal

of a disease, symptoms may be cured which were not before found in the provings, nobody denies, but still even this finds its analogue in spectrum analysis. Here also invisible rays are found which show their presence only by the application of the thermometer during manifestations of heat. (Tyndall, *l. c.*, 223.)

The law which governs homœotherapeutics, occupying so prominent a place in the scientific firmament, is perfectly capable of filling up the niche, which was left to it by cellular physiology and pathology. In our cellular therapeia we consider diseased conditions only abnormal molecular movements in the cell itself. We can only counteract such an abnormal motion by the law of similarity. Virchow's words, in the first chapter of his *Cellular Pathology*, are as true to-day as when that great work made its first appearance: "We are in the midst of a great medical reform. For the first time the whole range of medical science has become subject to the touchstone of natural science. Ancient dogmata have to stand the test of the crucible of experiments, and reliable methods are required in order to prove the truth of old experience. Everywhere the human mind endeavors to pierce the darkness, and to bring order again out of chaos caused by the upheaval of the ancient ruins becoming mixed up with the scattered building-material of our own time. It is not yet possible to put the labors of all workers into a perfect union whose foundation rests on biology, etc."

With gratitude and with pride we fully acknowledge our great indebtedness to the master minds who gave us such valuable treatises on the different branches of medical art and science, but hitherto the physiological school has neglected therapeutics, and blindly despised homœopathy as a delusion void of every scientific basis. We have tried to fill up this hiatus, and we hope to have convinced our readers that the pathological process begins in the cell, that cell-disease only consists of "molecules put in abnormal motion by extraneous vibrating media." Whatever may be the exciting cause, the symptom-spectrum would not show itself without a predisposing causa-prism, and our homœopathy covers here the colors, removes the disturbance, and health is re-established.

Cellular therapeia is the worthy finale to cellular physiology and pathology. It is only thus that a unity is established through the

whole range of medical science, and it gives a solidity, hitherto unknown, to the whole structure. Much has been done, much remains to be done. Let us be up and doing, for it is the duty of every one to do his share in the great work.

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## ARTICLE XII.—Otitis Media Purulenta.

BY DR. RAPHAEL MOLIN, OF VIENNA.

A CURIOUS, tricky disease, frequently observed, especially among children, is that disease which we call nowadays otitis acuta media purulenta vel suppurativa, and which formerly was known as otitis interna. Text-books hardly mention such a disease; even Niemeyer only observes, that in angina maligna scarlatinosa the inflammation may spread through the Eustachian tube to the cavity of the tympanum, and thus cause an otitis interna, which may lead to perforation of the tympanum, and to caries of the os petrosum. Only Richter mentioned it already twenty years ago, when he said, "that otitis interna frequently causes encephalitis, and many a time the latter is mistaken for the former, especially in children and unconscious patients. Otitis interna begins with a deepseated unilateral pain, accompanied by restlessness, sleeplessness, sometimes also deliria, spasms, and sopor. We have to examine whether otalgia or otorrhœa did not precede; we have to observe the position of the patient, examine the heat and redness of the concha auriculæ, also the meatus auditorius, and the glands of the neck, and percuss also the os petrosum (?). The diseased ear is usually deaf; we find sometimes paralysis of the facial nerves on the same side. After a while, symptoms of internal suppuration in the cranium, sometimes with discharge of pus through the Eustachian tube, by coughing and hawking. The treatment is that of meningitis, etc."

We thus see that otitis media was not in much favor with allopathic clinical teachers. In our homœopathic text-books we find that Kafka only mentions the scrofulous catarrh of the ears; and Hartmann remarks, that otitis interna may not only be caused by chills, but that inflammations of adjacent organs, especially acute and chronic cutaneous diseases, may produce it, and that it also

may be a symptom of secondary syphilis. He gives as pathognomonic symptoms: pain seated inside in the ear, of a burning, boring, stitching, tearing, hammering character, aggravated by the slightest motion, extending often over the whole head, and even affecting the brain; frequent complication with inflammation of the brain; increased sensitiveness of the auditory organ, with surring and blowing in the ears; high fever and loud delirium, vomiting, cold extremities, great anguish, twitching, syncope, pulsation of the temporal and cervical arteries, etc. Under allopathic treatment it passes easily into suppuration; but this never happened to him, and can be prevented by a correct homœopathic treatment. He relies on *Belladonna* where the brain is affected; in all other cases he prefers *Pulsatilla*.

Baehr in his classical work copies Hartmann, but acknowledges its great tendency to suppuration and to its extension to the brain, and this meningitis is a dangerous one to treat. Perfect restoration may take place, though rare; frequently disturbances of hearing remain, and even deafness may result. When suppuration takes place, its discharge outwardly is to be promoted, even though the tympanum may be destroyed, and a tedious otorrhœa follow. After quoting the remedies recommended by Hartmann, he leads our attention to *Mercur.* in syphilitic affections, to *Hepar* in scrofulous diathesis, to *Arsen.* in sudden collapse, with foul-smelling, ichorous discharge, to *Phosphor* in pyæmia, and to others.

Thus Hartmann and Baehr consider the diagnosis of otitis interna, or rather of otitis media acuta an easy matter, and consider as characteristic of it the deepseated pain in the ears, which continues from beginning to the end of the disease. Just this very pain I missed in a great many cases, and therefore I looked for an explanation in the latest works on otology.

Thus Gall considers characteristic the deepseated pain in the ear, aggravated by chewing, coughing, yawning, and similar motions. It is true that he also mentions surring and noises as of bells in the ear, difficulty of hearing, fear of sounds, vertigo, suffusion of the eyes, and sensitiveness to light; œdema of the affected side of the face, redness, and even painfulness of the external ear. But do we find such a picture in our little patients?

It reads very nice that, according to Schwartz, children suffering from otitis sleep restlessly and wake up with a scream; that motions increase their pains; that children over a year old bore the affected side of the head into the pillow, or press it against the shoulder of the nurse; that they dislike every change of position, and that they throw the little head about till they find a suitable support for the affected side; that nursing is more difficult for them than swallowing, so that nursing babes push away the nipple, and even emaciate when they are not fed with the spoon, and that they sometimes carry the hands to the ears, and bore in them with their tiny fingers. This whole complex of symptoms fails to give us a strictly exclusive diagnosis, and Gall acknowledges that otitis media and meningitis may be mistaken one for another.

Gruber also considers the pain characteristic; the children have one or more chills, become hard of hearing, light or furious deliria set in, followed by coma, or they may be even soporous from the start. But he makes the important remark, that, in spite of the great danger threatening the life of the patient, it is rare to lose a patient by this disease.

Troeltsch (*Lehrbuch der Ohrenheilkunde*, 1873) distinguishes two inflammations of the cavum tympani, the simple acute or mucous catarrh, and the acute purulent catarrh—otitis media. He says, that the former especially develops itself during atmospheric changes, in consequence of catching cold, in persons suffering from chronic catarrh of the ears, or from syphilis, and in persons with a tendency to affections of the mucous membranes; that severe cases mostly affect only one side, although the other side hardly ever remains entirely free. According to this author, characteristic symptoms are: constant difficulty of hearing, sometimes deafness, sometimes sensation of heaviness and pressure in the ears, frequently during the first period, either inconstant, only nocturnal, or constant tearing pains, lasting in some cases over a week, aggravated by swallowing, hawking, etc.; constant sounds in the ears, as ringing of bells, hammering, pulsations; in more severe cases a sensation of weight over the whole head, vertigo even returning in bed; finally, febrile manifestations, increasing to such a degree that the whole case is diagnosed as a cerebral

irritation, or as a meningitis. In fact, he considers it nearly impossible to distinguish, in children, between acute catarrh of the ears and congestive cerebral states, and he finds it very probable, from anatomical observations, that the otitis suppurativa is very frequent in childhood, and that its manifestations are frequently erroneously explained. He then adds, that the exterior auditory canal hardly gives any symptom for the recognition of the disease, and that the air-douche must be used for the purpose of diagnosis.

In speaking of the purulent catarrh of the ear, Troeltsch remarks that it is a frequent complication of dyscrasic diseases, or that it may emanate from the mucous catarrh of the ears in persons inclined to suppuration, but that it is an idiopathic disease during infancy. The symptoms are the same as in simple catarrh, only more severe; but cases may happen where such an abscess in the cavum tympani may pass off without any pain and without any fever, and lead to perforation of the tympanum. If a mistake can be made between simple acute catarrh and a cerebral affection, we find this still far more possible between an otitis causing a considerable hyperæmia in the dura mater lying over the os petrosum, especially as the general malaise claims our attention to a greater degree, until suppuration convinces us of the seat of the ailment; furthermore, inasmuch as the delirious or soporous patient is too often unable to give us the seat of his pain.

In considering the course of the disease, Gall mentions that the inflammation in most cases leads to suppuration, whereby the pains become excruciating, till, finally, after one or two days, blood-mixed pus is discharged through the torn membrana tympani, with loss of ossicula auriculares, and remaining deafness; or in very severe cases death may set in under co-affection of the brain, on the fourth, seventh, or eleventh day, with moaning, sopor, or convulsions. Troeltsch considers perforation of the tympanum the usual finale of otitis media, and believes those cases to be the most severe and dangerous ones, where the thickened tympanum forcibly resists the perforation and discharge of the pus, as then the inflammation spreads to the meninges and brain, and death may suddenly ensue. Schwarze found in five dead-born children twice the cavum tympani full of pus; Wreden, in



eighty cases of children of the age of twelve hours to forty months thirty times the purulent catarrh; Brunner, in three newborn children, and in three babes under five weeks, always a purulent or mucous catarrh; and, finally, Troeltsch, in forty-nine ossa-petrosa, belonging to twenty-five persons, in twenty-nine of fifteen children below a year, in most cases purulent catarrh of the cavum tympani.

Allow me to give you some cases to elucidate our subject.

My first case I witnessed, nearly thirty years ago, in the country. In the family where I passed my vacation, was a lovely little fellow of four years, who was as playful as ever before bedtime. About midnight I was requested to see him, as the child slept restless, and had high fever. The poor boy tossed about as if he could not find any position to rest, but remained the longest time on his back, screamed in his sleep, twitched off and on with his hands and feet, but kept his eyes closed; his skin was very red, burning hot, dry; the abdomen not contracted, pulse 120, impulse of the heart strong, respiration hurried. On being asked whether he had pains, he failed to give any reply. As I was then only a student, I put mustard to his feet and cold compresses to his head. After a while the heat somewhat decreased. On the following morning the child was very thirsty, but did not complain of pain; the tongue was moist, with a slight gray coating on its base, the face œdematous, the eyes without lustre and sensitive to light, no appetite. The country surgeon being called in, diagnosed a threatening typhus, and ordered Calomel, but at my request changed it to Digitalis, one-eighth of a grain per dose, which brought the pulse down and moderated the heat, but left the other symptoms untouched. It was strange that the child, always so full of life, did not wish to get up; that he was out of humor, refused all food, and remained mostly moaning and soporous on his back. The urine showed a red tinge, defecation normal. On the third or fourth day I thought my little friend suffering from meningitis, whereas the surgeon stuck to the diagnosis of typhus. Thus a whole week passed. On the evening of the eighth day the child suddenly began to scream, and complained of stitches in the right ear. The child rested the head on the painful side and soon fell asleep. The night passed more

quietly, and on the morning the pillow was found full of purulent, bloody spots, and in the ear traces of the same discharge. On the ninth day the boy was more lively, but no appetite yet. In the evening, nearly at the same hour, he complained of pains in the left ear. He fell asleep on his left side, and in the morning we found the same discharge from the left ear. Every trace of disease had vanished, his hearing restored, and my meningitis discharged its exudation through the ears!

2. In the winter of 1870 I passed the evening in the circle of a family where I was house physician. About 10 P.M. their little boy of five years suddenly screamed out in his sleep, and complained of terrible pains in his right ear. The pulse was normal, and I moistened some cotton with a few drops *Oleum hyoscyami*, and put it in his ear. The pains soon ceased, and the boy soon fell asleep again. The following day I was called early to see him. He passed a restless, feverish night, great thirst, dry skin, headache. I found him lying on his back in a half-soporose state, the face bloated, the eyes dull, the albuginea somewhat reddened, the pupil normal, the tongue moist with a light white coating, respiration normal, abdomen somewhat bloated, temperature increased, the beat of the heart rather higher than normal, pulse 140. Moaning and caring about nothing, he rested on his back, complained of pressure over the whole head, which did not allow him to keep his eyes open, of general malaise and excessive thirst. Vertigo as soon as he was raised up. Nothing abnormal could be detected in his ears; the otalgia of last night was gone. I prescribed *Belladonna*, cold compresses on the head, and a weak lemonade as a beverage. Thus the whole day passed and the following night, which was very restless. I diagnosed then an *otitis media suppurativa*, and gave a good prognosis, in case the abscesses discharged outwardly and dangerous symptoms did not get the upper hand of us. The second day he had epistaxis, without relief, and the little patient felt weaker. The parents requested a consultation, and a physician whose specialty was diseases of children was called in. He diagnosed typhus, considered the epistaxis as a symptom of decomposition of the blood, and recommended *Arsen.*, which was given; the pulse fell to 90, the head was more free and the heat more moderate. All the

other symptoms remained unchanged. My eighth day passed without any change. On the evening of the fourteenth day he suddenly complained of severe pains in the right ear. The parents anxiously inquired what to do. I replied nothing; this is the cure. The child soon laid his head on the painful side, fell asleep, and on the following morning the pillow was covered with the well-known bloody pus; pulse 86, temperature normal, head free, no thirst. The child was playful, and at my morning visit I heard that the abscess on the other ear had discharged without being preceded by pain. A few days afterwards I examined the ears, and found the tympanum intact.

3. In October last, I was called to a small delicate girl of three and a half years, full of sprightliness and mental activity. I had treated the child for several severe diseases. When I took hold of her for the first time, she was dropsical in consequence of measles. I found her this time in bed, the head was very hot, the face bloated, the eyes dull, the tongue with a white coating; in the right lung a slight bronchial catarrh, the abdomen somewhat meteoristic, gurgling by pressure, the skin burning hot, dry, pulse 120. The child had for a few days severe diarrhœa, but without fever, so that she was up and full of the mischief, as the mother said. The preceding night, the diarrhœa had increased, fever set in, she slept poorly, and was very thirsty. The stools were very thin and of a yellow color. I prescribed *Rhus*<sup>33</sup>, a tea-spoonful every two hours. The fever and heat moderated; the tongue became clean, except the base, which remained coated and of a leaden color; the diarrhœa diminished, and after the fourth day we had a well-formed stool. We could not understand why the fever, although in a less degree, still kept on, why all nourishment was still refused, and the nights were still restless and sleepless. She had no desire to get up, and on the fifth day coughed up some mucus, and vomited some clear yellowish-green fluid. Physical examination revealed an extensive catarrh of the right lung. I ordered *Ipecacuanha*<sup>33</sup>, to be taken in the same way. The vomiting stopped, the other symptoms remained the same up to the seventh day. In the left lung some small vesicular rattling murmurs could be heard. I thought on *Tartarus emeticus*, but fearing the action of this remedy on the hardly healed intestinal

canal, I decided on Phosphorus<sup>26</sup>. On the eighth day I found the following symptoms: Till about 11 A.M. the child had been lively and playful in bed, then she laid down on her back, high fever set in, she became soporous, moaned and twitched, and perspired freely on the occipital region, whereas the other skin was dry and burning. Towards 7 P.M. the fever decreased, she awoke, and became extremely and excitably lively. At 11 P.M. the fever rose again; she either laid quietly in sopor, or threw herself restlessly about; unceasing thirst, exactly as it was in the forenoon. As the bronchial catarrh could not explain this complex of symptoms, my thoughts reverted to an affection of the meninges, and I gave her, on the ninth day, Belladonna<sup>23</sup> in water. Under the action of this remedy she was free from fever by the eleventh day, lively, but very pale, and had no complaints to make. The other symptoms, except the coated tongue, the total loss of appetite, the restless nights, the thirst, and the desire to lie in bed, had totally disappeared. The urine, which formerly had only been a little darker, looked, on the ninth and tenth days, like weak coffee *au lait*, and deposited a copious sediment, but was normal again on the eleventh day. I omitted Belladonna and returned to Phosphor., on account of the slight bronchial catarrh. On the twelfth day, about 10 A.M., I found her playing in her bed. Suddenly the child threw away her playthings, laid down on her back, closed the eyes, became feverish, and on the pale cheeks some dark-red spots appeared in the region of the zygomatic bones. She moaned in her soporous state, and twitched again with her extremities. What could be the matter with the child? I asked myself; but a suspicion dawned in my mind. I ordered the child to be brought to the light, and examined the fauces, which I found inflamed. Now I knew what was the matter with the child. Changing again to Belladonna, I promised a crisis for the night from the fourteenth to the fifteenth day. On the thirteenth day the urine was again as on the ninth, the fever gone, in fact no symptoms except restless nights, no appetite and thirst. On the evening of the fourteenth day the child was cross the whole afternoon, laid down on her right side and slept. The mother told me the following morning that the past night was the first quiet one, and showed me on the pillow the well-known

purulent bloody spots, and the dried remnants of the discharge on the concha of the right ear. The thirst was gone, the bronchial catarrh gone; only the urine remained muddy, and the loss of appetite kept on. Belladonna was continued. The following night the abscess broke and discharged through the left ear, and on the morning of the sixteenth day the child rose from her bed perfectly cured. She could hear as well as ever.

*Symptoms of the Disease and Differential Diagnosis.*

The otitis media acuta purulenta vel suppurativa is an inflammation of the mucous membrane of the cavum tympani, with formation of a purulent exudation. It appears as a complication of other diseases, especially of dyscratic processes or idiopathic, in consequence of catching cold. In the latter case, it mostly attacks children and both ears. It begins with fever, which at first has the character of a catarrhal fever; sometimes with a chill, which may be accompanied or not by pains deep in the auditory organ. The pain is either constant, and then increases with every motion of the head, or by masticatory and deglutatory motions; sometimes it passes off in less than a quarter of an hour. The fever increases for some time, sometimes after a few hours; pulse 120-140; skin burning hot, dry, the face bloated, the eyes without lustre, with a moist, clear tongue, hardly coated at its base; there is perfect inappetency with troublesome thirst; the velum palati hyperæmic; the abdomen not drawn in; urine red; symptoms of cerebral irritation soon appear. Where the disease runs a favorable course or is stopped, the fever moderates after a few days, the pulse falls to 100 or 90, the skin becomes moist, perspiration sets in, the urine becomes sedimentous, all other symptoms remain unaltered. Especially the hyperæmia of the velum palati, the loss of appetite, the general malaise and restless sleep, the excessive thirst, remain unaltered. Only well-chosen remedies will remove, at this stage, the whole complex of symptoms except the hyperæmia faucium, the inappetency and malaise. On the eighth, sometimes only on the fourteenth day, the abscess bursts at night through the tympanum, at its upper posterior part, in the region of the membrana floccida Shrapnelli, and from this opening, drop by drop, a purulent bloody fluid is discharged. The

bursting of the tympanum produces sometimes very severe, sudden, but short-lasting pains; in other cases the abscess breaks without pains. The process repeats itself the following night on the other ear. As soon as the pus is discharged, the torn edges of the tympanum approach one another, and glue together. No perforation remains. Very rarely it may happen that with the pus the ossicula auditoria are discharged with perforation and remaining deafness. It is a curious fact in this disease, that the inflammation of the Eustachian tube gives way the latest, and thus remains impervious for a long time, so that pus cannot be discharged through it.

During an unfavorable course of the disease, the inflammation of the mucous membrane of the tympanum spreads by the branches of the arteria meningea media through the fissura petroso-squamosa to the dura mater, and a meningitis is added to the otitis media purulenta. This fearful complication makes itself known by symptoms of cerebral compression, especially by the sudden sinking of the pulse below the normal point. Death most frequently ensues.

An otitis chronica is rarely the sequel of the acute form, and mostly hints to caries of the os petrosum. The acute otitis media purulenta could be present, and the physician think that he deals with a typhus or a meningitis, especially when the case begins with a severe chill and without fever. But the curves of temperature, now so well known to every physician, ought to guard us from such a mistake, and against meningitis speaks the hyperæmia faucium during the first days, and at a later period the same hyperæmia and the absence of all symptoms of cerebral torpor. Even in infants, where the examination of the fauces is sometimes difficult, the non-appearance of cerebral symptoms ought to clear up the diagnosis.

The *prognosis* of acute otitis media purulenta is generally favorable. The prudent physician will be reserved, knowing full well that complications may arise, and that caries and deafness are possible results of this disease.

*Therapeia.*—We have two grand remedies to combat this disease—Belladonna and Arsenicum. The former, given in time, circumscribes the inflammation, moderates the fever, and thus

saves the strength of the patient. Hahnemann's *Materia Medica Pura* gives us symptom 44, tearing downwards in the internal and external ear; 52, stitches in the internal ear, with difficulty of hearing; 101, long-continued disinclination to food; 102, no appetite, everything is repulsive to him; 304, general debility; 310, sleeplessness; 315, before midnight restless sleep, the child throws itself about, stamps with its feet, and scolds in his sleep; 327, great thirst during sleep; 348, excessive thirst; 369, frequent moaning without telling the reason, or what sort of a pain produces it; 381, moaning in sleep, etc.

Noack and Trinks register under Belladonna: General great prostration of the whole body; subsultus tendinum; twitching of the extremities; inflammation of the mucous membranes; sopor; sleeplessness; very restless sleep; murmuring, singing, loud talking during sleep; high fever with convulsions; fever with unquenchable thirst; vertigo; rush of blood to the head; stitches from the upper maxilla into the inner ear; surring and murmuring in the ear; deafness, as if a skin were drawn before the ears; greatly swollen mucous membrane of the fauces and tonsils; total loss of appetite; long-continued aversion to all food.

Belladonna really is the similitimum to such a case. Recently, pathological anatomy taught us not to consider diseases as a complex of symptoms, but the symptoms as the expression, in fact as the consequence of a change in the tissues of the organism, inasmuch as it teaches, where there is no material alteration, there is also no symptom. Such an axiom applied to our case would read: Otitis interna purulenta does not consist in the complex of the symptoms described, but the symptoms are produced by the inflammatory process; they are in fact the consequences of the inflammation of the mucous membrane of the cavum tympani. According to this idea, have we to consider Belladonna the specific remedy, not inasmuch as it produces in the healthy organism the symptoms of otitis, but rather inasmuch as it produces a true otitis in the healthy? I answer in the affirmative, although we do find in our text-books of *Materia Medica*, among the symptoms of Belladonna, "otitis media purulenta." The reason of it is plain, because our pharmacodynamic has never been worked out in that sense, in which Professor Hausmann shows his studies on

the action of drugs, on their production of pathological changes. But of the complex of symptoms of Belladonna-diseases, and from the ear symptoms which Belladonna cures, we have a right to conclude, that this drug may produce an acute otitis media on the healthy organism. I have cured during the long years of my practice many cases of difficulty of hearing, of surring in the ears, of otalgia, with Belladonna, but only such where there was also an acute or chronic faucial catarrh. And what is the meaning of this catarrh of the fauces? It means a catarrh of the Eustachian tubes and of the cava tympanorum. Are not these pathological processes also produced by Belladonna? We therefore hold to the opinion, that Belladonna cures otitis, *not because the symptoms of Belladonna cover the symptoms of otitis, but because* BELLADONNA CAUSES OTITIS IN THE HEALTHY ORGANISM.

Pathological anatomy proves the truth of the homœopathic doctrine; that Belladonna does not lose its specific indication even when complication with meningitis ensues, can be shown by the autopsies given in our pharmacodynamic in animals: Slight injection of the pia mater, hyperæmia of the venous bloodvessels on the surface of the brain, redness of the corpora quadragemina and hemispheres, in man; the bloodvessels of the brain full to overflowing, and the brain decomposing; accumulation of black, thin, fluid blood in the sinuses of the dura mater, pia mater, and in the substance of the brain, etc.

Every homœopath knows when to give Arsenicum. The symptoms for otitis media purulenta read: Roaring in the ears, particularly during the paroxysms of pain, ringing of bells all over the head, difficulty of hearing, as if the ear were stopped up; the ear becomes closed during deglutition; inflammation of the fauces; angina; angina gangrænosa; and in the autopsies, inflammation of the cerebral membrane.

Homœopathy knows how to battle with otitis media purulenta. Even without the speculum, without the air-douche, the diagnosis is not enigmatical to us. We possess specific remedies for this disease, even such as stand the ordeal of pathological anatomy.—*Internat. Presse*, v. 6, p. 366.



**ARTICLE XIII.—Psorinum.**

A STUDY BY S. L.

DR. JAMES B. BELL (*Hahnemannian*, iv, p. 398) remarks: "I can think of no way in which to serve you better than by calling your attention to this remedy. I first became well acquainted with its properties by studying the symptoms as given in Lippe's text-book; and soon after, I became convinced of its great value by clinical observation. Some might, and do object to remedies which may be supposed to be isopathic; but there is not the slightest reason for believing that the contagious products of disease are of that character when homœopathically potentized. Others object to drugs of filthy origin. They hold up their hands in holy horror of all such excrescences of homœopathy. They might as well turn up their classic noses at the golden corn and mellow pumpkin of our autumnal fields; the rich product of fragrant animal manures, and much nearer their origin than is the potentized homœopathic remedy. *Psorinum* resembles closely *Carbo veg.*, *Cinchona*, and *Phosphoric acid*, etc., etc."

As far as my reading goes, the pathogenesis of *Psorinum*, as found in Stapf's *Archiv.*, xiii, p. 163, has never been translated, and at the request of several friends, who are unacquainted with the German language, we will try to give a fair translation. The proving was made by two gentlemen with pellets of the thirtieth potency, and the symptoms carefully and conscientiously noted.

1. He feels a great deal better in the morning.

Vertigo in the morning.

Vertigo, everything turns around with him (eighth day).

He feels like stupefied in the left half of the forehead (in the morning and after three hours).

5. When he woke up at night, his head felt cloudy, as if he had been intoxicated during the evening; fuddled, stupid, he falls down.

Thinking that he understood what he read, he tries to explain it to another, and thus finds out that he does not understand it himself.

- Memory so weak that he forgets what he said.  
 She loses her memory, so that she does not recognize the room after looking out of the window.  
 Very weak memory; she cannot recollect anything.
10. Very forgetful (eighth day).  
 A crampy pain in the skin of the right temple (7½ P.M.).  
 A pressing pain, like strained, on the right side of the occiput (noon).  
 A pressure, shooting into the head, in the left temple (first evening).  
 Sensation as if a cord were tied firmly around the skin, especially about the occiput; it feels as if it were pressed outwardly.
15. Frontal headache, as if the brain had not space enough in the skull, when getting up in the morning, as if everything were pushed out; it feels better after washing and breakfast.  
 Sensation of heaviness in the head (mornings).  
 Headache—tearing.  
 Boring, stitching pains in the left temple.  
 Hammering pain in the temples.
20. Headache, as if everything would escape through the forehead (second day, evening).  
 Contracting frontal headache.  
 Sensation, as if her whole head were on fire.  
 Headache (evening, second day).  
 Pains all through the head, as if a hammer were beating in the head.
25. Severe headache, as if a stick were put into her head, with general malaise. She has to lie down about 7 P.M., and soon falls asleep. She perspires freely during the night, which greatly relieves her (second and third day).  
 Thrusts in the head (fifth day).  
 Pressing headache in the forehead and temples (seventh day).  
 Spasmodically contracting headache (eighth day).
30. Squeezing headache with otorrhœa (seventh and eighth day).  
 Fulness of the head during mental labor.  
 The blood pulsates in the head during mental labor.

Pain in the temples after mental exertion.

On the left side of the forehead, dull, pressing, sore stabs, whether he keeps quiet or moves about (second and third day).

35. Frontal headache, with sensation of weakness in the forehead. The forehead itches (or blotches on the forehead).

Stitches in the right side of the forehead, extending into the eye.

Burning in the forehead (second day).

Pain in the centre of the forehead (fourth day).

40. A drawing pain in the mucous cavity of the forehead, as in coryza.

Frontal headache (third day).

Many pimples on the forehead.

Pale face (third day). The zygoma pains at the touch as if ulcerated (third day, evening).

Perspiration in the face.

45. Yellowish sickly color of the face, from December to March, in a man who usually looks well.

Burning in the face.

A coarse miliary eruption over the left eyebrow and cheek, which soon passes off (third day).

Itching in the face, on the neck and hands, when she touches these places.

Burning in the face, followed by vesicles.

50. Many painless nodules in the face, on the neck and legs, for a long time.

Many vesicles in the face.

Facial pain diminished.

Dazzling of the eyes when walking in the street (first day, evening).

Pressure in the right eye, worse when touching it.

55. The eyes feel tired in the evening, as after reading much by candlelight (first day, evening).

Pressing stitches in the left eye.

The sight suddenly vanishes, so that for a few moments everything appears blurred (second day).

The eyes become gummy.

Towards evening, lachrymation.

60. Pressing pains in the eyes.

Deep, broad, blue rings around the eyes.

Burning pains in the eyes, as if sand was thrown into the eyes.

Glassy eyes; agglutination of the eyes in the morning; pressing pains in the eyes.

Red efflorescences at the edges of the upper eyelids, like fresh hordeola; sensation as if something were moving before the eyes, as if one was playing with his fingers before them.

65. Stitches in the left eye.

Eyes as if full of sand.

Pressure as of a foreign body in the right eye, as soon as it is closed; when the eye is opened, the pain is gone (evening).

Inflammation of the right eye from December 18th to 30th.

Small burning efflorescences below the eyes, like hives.

70. Ophthalmia with pressing pains, as if sand were in the eyes; lachrymation during the night.

Itching of the right eyelid (six hours).

Fiery sparks before the eyes (five hours).

Lachrymation (five hours).

Fine stitching pain in the region of the eye, below the orbita, as if she had sand in the eyes (four hours).

75. Stitches in the eye (five hours).

Soreness of the eyes and burning, she has to shut them constantly.

When looking for a long time at an object, the tears run down her eyes (eight hours).

Pressing pain in the eyes.

Biting pain in the eyes.

80. Itching in the corners of the eyes.

Itching of the left lower eyelid from one side to the other.

On the border of both upper eyelids an efflorescence like a hordeolum (fifth day).

All objects in the room appear as if they were trembling (vibrating).

Dull murmurs in the left ear (first day, evening).

85. The right ear as if it were changed; he feels as if he hears with the ears of another person.

Sensation in the left ear as if the breath did not come from the respiratory organs, but from the ear.

Sensation as if something suddenly bursts in the ear, when eating, or swallowing saliva.

Stitches towards noon in the ears.

Stitches in the meatus auditorius internus, momentarily relieved by boring with the finger in the ear, then aggravated. Stitches frequently return, especially in the evening during rest.

90. Biting pains in left ear.

Tingling either in the left or right ear, with surring in the head, so that she hardly hears anything ; behind the ears, in the region of the sterno-cleido-mastoideus, a teasing soreness ; sometimes for a moment a sensation of burning heat extending to the vertex ; worse in the evening, when she feels as if somebody pulls her up by the hair.

Hardness of hearing in right ear (seventh day, morning).

Surring in the ear (first day).

After the surring stitches in the left ear.

95. Itching in the right ear.

Stitching pains in the ears.

The left concha inwardly inflamed with suppurating efflorescences.

Stitching pain in the right ear, preceded by coldness.

Discharge of fetid pus from the ear (seventh hour).

100. Discharge of reddish cerumen from the left ear.

Discharge of fetid pus from the left ear.

Otorrhœa with headache (eighth day).

Pain as from an ulcer in left ear ; at the same time on the right ear an efflorescence, having the appearance of the healthy skin, but split in four parts by a cross, like a wart ; in the centre a deep, small indentation.

A long-continued, very painful stitch in the lobe of the left ear (evening).

105. A small efflorescence on the upper lip.

Burning of the lips.

Stitching pains in the mandibula.

The submaxillary and lingual glands greatly swollen and

painful to the touch. Also a very painful purulent efflorescence below the left mandibula.

The teeth feel dull when smoking (first day, afternoon).

110. Tearing in the teeth.

Teeth, which are usually loose, feel firm in their sockets (second day).

Stitching pains in the teeth, from one side to the other, extending to the head, followed by burning pain in the right cheek, which is also somewhat swollen.

At dinner a severe stitch in a carious upper right tooth, as if the tooth would be pulled, followed by steady, irritating, hammering pain in all the teeth of the right side, only in daytime, ameliorated by the fresh air.

When touching the teeth, in order to remove something which had lodged between them, a stitch as from needles.

115. Especially the front teeth feel so loose, that he fears their falling out. The pain is increased by touching them.

Amelioration in the fresh air; much mucus in the mouth of a nauseous taste. (September 10th till last days of October.)

The gums on the right side are ulcerated, after the long-lasting toothache is entirely gone.

Nearly always a white coating on the tongue.

120. The tip of the tongue feels burnt, up to the middle of the tongue, so that he has hardly any taste.

The tip of the tongue very dry, as if burnt, painful.

The tongue covered with a yellowish-white coating.

The tongue dry (fourth day).

Dryness, a scraping sensation in the throat (fourth day, morning).

125. Sore throat, she swallows only with difficulty.

Pain in throat, as if it were swollen.

Severe angina; on the right side an ulcer with a sore pain deep inside and burning in the fauces.

A painful pustule on the fauces.

Titillation in the throat, causing cough (sixth and seventh day, morning).

130. Dull, obtuse stitches in the left tonsil (sixth day).

- Burning in the throat, extending downwards.  
 Pressing pain in the throat; she swallows with difficulty;  
 pains go and come.
- Burning in the throat (fifth day).  
 Titillation in the throat (mornings).
135. A small efflorescence on the neck, with a small tip of the  
 size of the head of a pin, with a black point in the centre,  
 very painful when scratched (mornings).  
 The glands of the neck are swollen on both sides, painful to  
 the touch as if they were bruised, and the pain extends to  
 the head (seventh day).  
 Red miliaria on the neck, beginning with a stitching pain.  
 Efflorescences on the neck and mamma.  
 The fauces feel as if they were swollen.  
 Sore throat, cannot swallow.
140. Sore throat, everything she takes burns, *e. g.*, soup, but she  
 can take cold food without difficulty (seventh day).  
 The left tonsil feels sore and swollen.  
 A severe stitch when turning the head in the sinews of the  
 neck on the left side.  
 Hoarseness.  
 Burning in the throat.
145. Painful sensation in the throat when swallowing saliva;  
 difficult deglutition.  
 Flat, sticky taste.  
 After eating, or smoking tobacco, the nauseous taste increases.  
 The whole dinner tastes oily.  
 Foul taste in the mouth; she drinks to get rid of it.
150. Tough mucus in the mouth of a foul nauseous taste; the  
 teeth stick together as if glued, and they can only be sep-  
 arated with difficulty (January 2d to January 9th).  
 Dryness of the mouth.  
 Sticky taste in the mouth.  
 Desire for breakfast (after two hours).  
 After breakfast no inclination to smoke, but when he begins  
 smoking the pipe tastes good (first day, morning).
155. Itching on the tip of the nose (first day); the nose more  
 dry than usual; it hardly needs cleaning (third day).

Boring stitching in the right nostril, followed by severe sneezing (third day).

A scab on the nose, which commonly fell off when coughing, is now firmly adherent and hard.

Burning in the nose, followed, as in catarrh, by fluent coryza; after discharging the mucus the burning pain ceases for a short time (fourth day).

In the left nostril pain as of pricks with needles, when boring in it with the finger.

160. Sensitiveness when breathing air through the nostrils, which are nearly dry (eighth day).

A stitching pain extending from the forehead to the nose.

The septum narium inflamed with white suppurating pustules (seventh day).

The nose always clogged up.

Lips dry.

165. Lips painful and as if swollen.

On the inner side of the lower lip a clear vesicle, which burns and is painful.

Lips brown and black, dry (fifth evening).

Painful itching of the right half of the upper lip, as if swollen.

170. In the afternoon hunger and thirst for beer (first day).

Great desire to smoke, but when not doing it the appetite for it ceased (first evening).

Hunger without appetite.

Unusually great hunger after a walk (third day, evening).

Although he has a good appetite, he is easily satiated.

175. The bread and butter in the morning tastes for three days like urine of cats (? Katzenbisse); at any other time it tastes natural.

Perfect disgust for pork.

Great thirst during dinner.

Thirst for beer.

Diminished appetite.

180. A good appetite and still more thirst.

No appetite to eat, but he wants continually to drink.

Great thirst; dryness and burning in the mouth.



- Hunger in the evening (sixth day).  
Excessive thirst (fourth day).
185. Great hunger.  
After drinking water, pyrosis.  
Sour eructations.  
Hiccough.  
Hiccough soon after eating, when smoking his pipe.
190. Rancid eructations (evening).  
Hiccough after eating.  
Pyrosis.  
Eructations tasting like rotten eggs.  
He feels delicate in his stomach after supper; after eating some roast it ceases (first day, evening).
195. Morning, nausea.  
Vomiting after eating; nausea and vomituration till vomiting took place, first of food, then of a sour, slimy fluid.  
*Constant nausea during the day, with inclination to vomit; a kind of vomiting of sweet mucus every morning at ten and in the evening (November 8th to January 21st).*  
In the morning, before eating, vomiting of sour mucus, so that the teeth stand on edge.
200. Nausea and vomituration.  
Titillating sensation in the throat, followed by empty attempts of vomiting (morning).  
Sour vomiting.  
He feels nauseous and sore in the pit of the stomach (mornings).  
Spasm in the gastric region (fourth day).
205. Stitching pain in the pit of the stomach.  
Cutting pains in the intestines, relieved by the passage of stinking flatus (first evening).  
Cutting pains in the intestines, as when taking a laxans (third day).  
Cutting in the gastric region (fourth day).  
Intestinal spasms, early in the morning, in bed.
210. Colicky pains.  
Cutting pains in intestines; weakness and pressure in stomach have ceased.

- Twisting in abdomen, so that he has to run for the closet ;  
after the stool feels better, early in the morning.
- Colic towards evening ; immediately removed by eating.
- When lying down, waterbrash ; removed by getting up ;  
colic removed by eating.
215. Griping bellyache.  
Contracting pains in the gastric region.  
Bloatedness of the abdomen after eating ice-cream.  
Stitches in the hepatic region.  
Stitches in the region of the spleen.
220. Stitching pressing under the left false ribs.  
Stitches in the sides.  
Severe stitches under the last rib, left side. (From February to May the stitches continued in the abdomen.)  
Stitches in the region of the spleen, passing off when standing still, but are renewed when walking ; after awhile they are even felt during rest.  
Stitches to the left of the umbilical region, very frequently during rest.
225. Stitches in the right abdominal region.  
Twitching of muscles in the right side of the lap after riding ; once, but very severe.  
Sensation of a tumor horizontally over the abdomen, below the short ribs, when sitting.  
Boring in the bones of the spinal vertebræ ; bellyache as from rheum (mornings).
230. Abdomen unusually bloated after eating.  
Gripping in abdomen while riding.  
Gripping all over the abdomen, especially in the pubic region in females.  
Cutting in the abdomen, in the umbilical region.  
Bloated abdomen.
235. Cutting pain in the lumbar region, so that she could not walk alone.  
Several times stitching pressing in the os pubis during bodily exertion.  
No flatulency whatever up to the middle of February.

- Tenesmus and bearing down towards the pubes, with painful burning micturition.
- Dull stitching pains in the inguinal glands (seventh day).
240. Diarrhœa, preceded by bellyache (first day, early).  
Four or five stools a day, preceded by bellyache.  
Sometimes it shoots away as from a syringe, another time it is mushy, sometimes even of normal consistency (first, fourth day).  
Sometimes fruitless efforts to stool; he thinks he cannot hold it any longer, and after getting ready no stool passes.  
Stool dark-brown, very fluid, and foul-smelling.
245. Stool during night nearly involuntarily—he hardly can reach the closet, and passes at the same time any quantity of flatus; the stool was of normal consistency and passed in small balls (sixth night).  
Gurgling in abdomen (sixth day, morning).  
Four diarrhœic stools without pain (second day).  
Stools are stopped (first day).  
Twice stools in the forenoon.
250. Itching in anus (fourth day).  
Sensation in the rectum as if chafed, during a ride (fourth to sixth day).  
Copious perspiration in perineum when moving about.  
Burning and cutting during micturition.
255. Tenesmus urinæ, very painful, and when he thinks he is done, a few drops will yet be discharged.  
Stitches in the urethra, from the orifice inwardly (second day).  
Some urine still flows from the urethra after micturition, although he tries to hold it back.  
At the beginning of urinating, a burning pain at the tip of the penis.  
A painful suppurating vesicle on the scrotum.
260. Discharge of prostatic juice before urinating (sixth day).  
Frequently a tight, drawing sensation in the penis.  
*Perfect aversion to the coitus; nearly through the entire drug disease.*

*Perfect impotence* for four weeks (in a very robust man, able to do his duty during an embrace).

No semen is discharged during an embrace.

265. The sexual organs relaxed.

The gland inflamed, and an ulcer on it, the testes swollen and hard (third day).

Careless about sexual connection, relaxation of the male sexual parts, and no desire for coitus.

Menses eight days too late.

Menses too late, and less than usual.

270. Sometimes severe sneezing (second day).

Severe sneezing after boring pains in the right nostril.

Frequent sneezing without coryza.

*Tough nasal mucus*; he can hardly do a minute without his handkerchief, and still he has no coryza. It feels as if he had a plug high up in the nose, which nauseates him, relieved by stooping.

Dry coryza (for three months).

275. Fluent coryza after burning in the nose.

Severe coryza for several hours, and frequently repeated.

The burning ceases for a little while after the discharge of mucus (fourth day).

Catarrh with cough and expectoration of yellowish-green mucus.

Fluent coryza.

280. Dry cough with soreness under the sternum (second day).

Cough with sensation of weakness in the chest.

Continued cough with expectoration from the chest, also of much saliva and vomiting of acidulous mucus.

Tussiculation, dry, caused by a titillating sensation in the trachea.

Hoarseness.

285. Dry cough with sensation of heaviness in the chest.

Dry cough with nausea and vomituration; titillation in the throat the whole day (seventh day early).

Irritation to cough with a sensation of coldness.

Cough, in the evening, with pains in the chest and throat, passing off when she is quiet; talking produces cough.

290. Hoarseness in the chest and throat.  
 Titillation in the trachea and frequent cough.  
 Dyspnœa in the evening (first day).  
*When breathing, frequent stitches from the back towards the chest.*  
*When breathing, stitches in the right side of the chest, several times.*
295. When taking a deep breath, stitches in the sternum ; when touching it, a pressing and bruised pain.  
*Short breath in the fresh air, ameliorated by riding and lying down.*  
 Dull feeling in the chest with excruciating pains in the back.  
 The *want of breath* and pains in the chest are worse when sitting down, so that he could not write in six weeks; ameliorated by lying down.  
*Want of breath in the fresh air, so that he has to hurry home in order to lie down.*  
 He breathes easily when doing some light work, as trimming trees.
300. Short breath.  
 Twitching through the anterior left side of the chest.  
 Oppression of the chest.  
 Dull boring pain in the right side of the chest with oppressed breathing (sixth day).  
 Stitches in the left chest.
305. *Cutting, as of knives, in the chest; the throat feels as if burnt; eructations, afterwards flatus, with good appetite in the evening.*  
*Excruciating pains in the chest.* He feels as if a heavy load were on the chest and presses it down, for three days, with want of breath, greatly increased by inclining the head forwards when stooping.  
 When in bed he has to remove the arms away from the chest, as they increase the pain.  
 Pain in the chest, *as if the lungs were torn away, and something presses them downwards.*  
 Stitches in the chest, even when not breathing.

310. When lifting, it feels *as if everything were torn in the chest*.  
 Palpitations (fifth day).  
 Stitches in the right mamma.  
 Oppression in the chest.  
 Cough with expectoration of green mucus; nearly like matter, especially in the morning when waking up, and in the evening when lying down, with nausea. It sticks firmly, and he can only expectorate it with difficulty.
315. When coughing, pain in the chest as if something would like to be torn away from under the sternum to the throat (seventh day).  
 Ulcerative pain in the chest, under the sternum.  
 When coughing, stitches in the chest.  
 Tensive pain in the neck, after waking up, as if he slept in a wrong position (second day).
320. Drawing pain in the neck, extending to the shoulder, after waking up.  
 Stitching pains in the neck, and pustules of the size and form of lentils.  
 Boring and stiffness in the neck (sixth and seventh day).  
 Tearing in the neck.  
 Several pustules in the neck with stitching pains.
325. Extremely severe pain in the neck, only in the room; it passes off immediately in the fresh air, but returns quickly in the room. By supporting the head with his hands it feels as if it had no body, as if he could pass through it with his hand (a whole afternoon).  
 A constant tearing in and between the shoulder blades, down the sides, as if rheumatic.  
 Tearing in the shoulder blades (fifth day).  
 Stitches between the shoulders (mornings).
330. Pains in the back, as if the third vertebra from below were wanting or broken (very severe for eight days).  
 Tearing in the left axilla, afternoon and evening when resting.  
*Excessive backache*, a kind of stitching pressing.  
 The back feels bruised; he cannot straighten out (first evening).

335. Between the second and third dorsal vertebra a dull pressure (first day, afternoon).  
 Boring pains in the dorsal vertebræ (sixth day).  
 Stitches in the lumbar region, extending to the knee (seventh day, morning).  
 Pains in the small of the back.  
 Weakness in small of the back (first day).
340. Pressure and itching in small of the back.  
 Stretching in the pelvic bones; to the knees; when walking.  
 Spasmodic pains in the bones of the whole left arm, evening when at rest.  
 Unusual roughness of the phalanges up to the metacarpus of the external hands (for five days).
345. In the morning with every step a stitching pain in the joints of the foot, right side, also as if he had strained a sinew.  
 Tearing in the left knee and left axilla.  
 The leg, on which he rests, feels too weak to stand the pressure of the other; he has to change his position continually, till he falls asleep (for six days).  
 Gouty pains in the whole left foot.
350. Inclination when walking to turn the left foot inwards, with sensation as if he had really turned it the wrong way, so that he looks at it in order to convince himself of the contrary (for five days).  
 Very little labor exhausts his strength.  
 He feels exhausted after riding.  
 Tearing in the right elbow (first day, evening).
355. Itching in the left arm.  
 Itching in the right elbow.  
 Intermittent stitches in the left arm.  
 Itching in the biceps of the right arm.  
 Tearing in the arm.
360. Stitches in the left index finger.  
 Sweat in the palms of the hands.  
 Itching in the right carpus, with red spots, like fleabites, which itch and then pass off.  
 Weakness in all joints, as if they would not hold together.

- The pains and itching of the feet increase during rest.
365. Gaping, the first hour; horripilations with pale blue rings;  
with tearing and spasmodic pains in the umbilical region  
(seventh day, noon).  
Malaise; he feels tired out.  
Feels best when lying down.  
Does not like to work.  
Much yawning at noon and in the evening.
370. For several days he becomes sleepy very early.  
He dreams of his business and of his plans.  
Anxious dreams of robbers, travels, and dangers (towards  
morning).  
Restless, unrefreshing sleep.  
Frequent yawning in the evening.
375. Malaise and tired sensation towards evening; feels better as  
soon as she goes to bed.  
Very troublesome dreams.  
Frequent yawning and early sleepiness in the evening.  
Sleepy all the time.  
He dreams that he is on the closet, and thus nearly soils his  
bed (fifth day).
380. Very restless sleep for several nights.  
Excitable before falling asleep.  
Very sleepy in daytime (sixth day).  
Sleeps unusually firm, several nights.  
She sleeps as soon as she sits down.
385. Restless sleep on account of disquieting dreams.  
Cannot fall asleep in the evening (for five weeks).  
Many connected dreams which are remembered; the body is  
in the same position when waking up as in the evening  
when falling asleep (curative action).  
Cannot sleep on the habitual right side, but sleeps on the  
left one (for ten days).
390. Several times horripilations, especially in the evening, with  
hot flashes, great malaise, debility, sleepiness.  
Stretching of the extremities, without thirst or any other  
complaint.  
He perspires freely when walking.



- Internal horripilations in the afternoon.  
Towards noon internal chilliness and horripilation.
395. Dryness of the mouth ; after the chill great thirst, then heat in the mouth.  
Sweat in the palms and face.  
Several times during the day sensation of chilliness.  
When the sun shines upon her a sensation as if it pushes her down ; she has to rest a little while in the shade, in order to walk on (fourth day).  
Heat in the evening, as if she would lose her senses ; is delirious, very thirsty, perspires during the night, then feels well.
400. At the meals and in the evening frequently a *sudden heat over the whole body, with copious perspiration all over the face*, whereas others complain of coldness. Frequent thirst, dryness, and burning in the mouth.  
Sensation of coldness for several days.  
Heat and sweat in the evening when riding (sixth day).  
Horripilations.  
Heat in the afternoon.
405. Headache.  
Thirst, coldness, dryness in mouth and lips, for four days.  
Heat, sweat, thirst, during the chill and heat.  
Headache, coldness, dryness of mouth and lips.  
Horripilations several times a day (sixth day).  
Copious sweat in the palms.  
Unusual anxiety when riding.
410. Anxious oppression, palpitation (first day).  
Trembling of hands and feet (fourth day).  
Trembling of hands (sixth day).  
Trembling of feet.  
Anxiety, full of forebodings, very restless, with trembling of the hands.
415. Hot trembling over the whole body ; is very busy.  
In good humor ; he works with pleasure (second morning).  
Irritable and quarrelsome in the evening.  
She is so downhearted that she could commit suicide, then full of phantasms.

- Irritable, could weep about everything.
420. Sometimes very melancholy, and then excessively frolicsome.  
 Very melancholy and despairing; he wishes to die in spite of his good luck.  
 Very irritable; quarrels about trifles.  
 Melancholy and sorrowful.  
 Cheerful, lively, enjoys everything (sixth day).
425. He pictures the future in the brightest colors.  
 Very depressed (seventh day).  
 Very sentimental.  
 Very quarrelsome.  
 In great humor and full of fun.
430. Very irritable and quarrelsome in the morning.  
 She is very irritable, easily angered; thinks always of dying.  
 Suddenly very lively, at other times down in the mouth; thus it changes several times during the day.  
 Very irritable, and wants to talk all the time.  
 Every moral impression affects her so much that she trembles over the whole body.
435. His ideas are all morose.  
 Despairing mood; he fears to fail in business.  
 He cannot rid himself of the ideas which appeared to him first in his dreams during the night (for three days).  
 Great disinclination to ride in a carriage (for four weeks); then at once she wants to ride out all the time, even in bad weather.

Altschul (*Real Lexicon*, p. 322), with Neumann, Hering, and others, considers Psorinum an animal drug, belonging to the same class as Apis, Aranea, Lachesis, and Sepia. He considers characteristic of this remedy:

Weakness in all joints; ailments when moving or riding in the fresh air, ameliorated by rest; most complaints in the morning, evening, and at night; gouty and rheumatic pains, mostly in the extremities; dropsical conditions. An old cough disappears; palpitation and fixed pain in the chest after taking Psorinum; curative effect. Herpetic eruptions gradually disappear. Itching over

the whole body at night; scabies; herpes, with scrofulous ophthalmia; anxious dreams; melancholy; rush of blood to the head; headache as if the brain were pushed out of the skull; pains on small spots of the head, dulness of the head, tinea capitis; pressure in the eyes, sensation of sand in the eyes, with photophobia; sallow color of the face, crusty eruptions on the face; looseness of the teeth, ulcerated gums; nausea, vomituration; indurated spleen; chronic abdominal ailments are renewed; obstinate constipation; involuntary micturation, with burning in the urethra; condylomata on the prepuce and herpes on the scrotum; aversion to an embrace; dry coryza; dry cough, with oppression of the chest; cough, with greenish expectoration; incipient phthisis; want of breath in the fresh air, ameliorated when lying down; unbearable pains and stitches in the chest; pains in the small of the back when walking; stiffness of the neck; an herpetic or itchlike eruption on the hands.

Granier (*Homœolexique*, ii, 526) is no great admirer of Psorinum, inasmuch as different prescribers use different preparations, Hering from the pustule of scabies, Weber from lichen agrius, whereas we know that Lachesis is always Lachesis. Boenninghausen employed Psorinum in chronic diseases, when other strictly indicated remedies failed to act, and he found that after giving Psorinum, the same remedies were more efficacious. Lobethal calls Psorinum "the quintessence of the antipsorics," and finds it efficacious where, on account of a latent psora, disease and suffering exist, which fail to be benefited by our remedies. As Lobethal precedes Psorinum with a few doses of Sulphur, Granier truly remarks, that we do not know to whom to ascribe the benefit, to the well-known Sulphur or to the unknown Psorinum. It may be used with benefit in inveterate eruptions, spreading over the whole body, disappearing and then coming again. Asthma, prodromata of hydrothorax, chronic pulmonary blennorrhœa, which may run into consumption, may all be caused by a repercussion of a chronic exanthema, and may then find its remedy in Psorinum. High dilutions, a dose every four to five days, are preferable, till amelioration has well set in.

Ehrhardt recommends Psorinum in scrofulous, herpetic, psoric dyscrasia and cachexia, in blennorrhœa, in inflammations of the

eyes, nose, mouth; in fact, in all membranous parts with tendency to form pustules, with itching and ulceration; in dyspepsia, in diseases of the liver and spleen, in cholera, lenteria, chronic diarrhoea, inactivity of the skin, with suppressed perspiration, as well as in colliquative sweats, in leucorrhœa, metrorrhagia, suppression of menses, prostration of strength on account of long-lasting diseases and great loss of fluids, etc., etc. As this author recommends it in so many diseases, Granier again is in doubt what to do with those "etc., etc.," and acknowledges that this remedy certainly deserves more study. Its principal sphere of action seems to be the capillaries and the cellular tissue. (Might we not go one step higher, and consider its principal sphere of action the protoplasm, for in those very diseases where Psorinum acts best heredity of disease is also one of the grand characteristics, and, by changing this perverted bioplasma to a normal one, a restitutio ad integrum is possible.—S. L.)

Dear old Father Hering (*N. A. J. of H.*, ii, 361) gives us a most beautiful article on "Psorinum and its Chemical Rescue." Here *he, the master*, shows that, not by mere theorizing, but by pure experimentation, by *provings upon the healthy, and by clinical observation upon the sick*, he placed Psorinum in its right place among the nosodes (morbid products, and especially the active salts contained in them). Experience since then has fully demonstrated that these nosodes are very serviceable in diseases which apparently bear no resemblance whatever to the morbid process which produced them, and that they also exercise a special and very striking curative effect in these latter cases under conditions which we do not yet fully recognize. And at the end of this article Hering refers, up to 1852, to all the cases which till then had been cured by Psorinum, and requests further proofs!!

Lippe (*Textbook*, 553) considers Psorinum indispensable if debility remains after violent acute diseases; if profuse perspiration remains after typhus fever; for the evil consequences of suppressed itch, especially after large doses of Sulphur; if the patient is hopeless, despairing of his recovery.

Raue (*Record*, 1870 to 1874) gives us confirmation of the following symptoms removed by this powerful nosode: Extreme dulness; he fears inflammation of the brain; relieved by epis-

taxis; headache after darkness before eyes; black spots before the eyes (Haynel); horribly offensive, nearly painless, almost involuntary, dark and watery stool, ONLY in the night and most towards morning (from midnight to noon is my experience. S. L.) (Petroleum has diarrhoea always in the daytime, noon, and at night); headache, preceded by dimness of sight or spots before the eyes (Haynel); headache and eruptions increase during changeable weather; is always very hungry during headache; canine hunger; craving for food, without appetite; depressed in spirits and hopeless; aggravation from sudden changes of weather; eruptions; headache with hunger, or hunger before headache. (W. P. Wesselhoeft.)

To give Psorinum understandingly, it seems to me wise to study the origin of Psorinum, the hydraheaded psora, so constantly misunderstood, so often derided, and still a fact which stares us in the face in nearly every chronic case we have to treat. Dr. Frost, of Bangor, Maine, published in the sixth volume of the *American Homœopathic Review*, page 145, an article entitled "The Sympathetic and Spinal Systems in Relation to Psora," wherein he "advocates the ganglionic system as the fundamental form of life, common alike to the lowest and to the highest species, and this vital principle, peculiar to the ganglionic system, is originally constructive and constantly sustaining all the rest. Hence all that is meant by *constitution* must belong to the ganglionic system, which, in immediate relation to the seminal embryo, precedes both spinal and cerebral organization. In those obscure recesses of nature, the minute individual and collective ganglia of the sympathetic system, lie concealed the subtle but persistent germs of health and longevity on the one hand, and of disease and premature decay on the other. Here, amid the *primary and most secret springs of life*, ready to flow with them into all the vital organizations and into the spinal and cerebral systems, and to perpetuate itself in procreation and conception, lurks the latent miasm, the *agrea tophana* of scrofula, or of that hereditary psora, which since Hahnemann's time has remained a *questio vexata* to the physician."

And again, page 151: "Instead of being limited to an 'itch,' suppressed in the person of the sufferer himself or in some of his

ancestors, *psora* may be regarded as an hereditary taint of constitution. Doubtless the skin is the primary and preferred form of development of all chronic as well as of all acute diseases. The relation between the sympathetic ganglia and the spinal cord is still but imperfectly understood. Disease in the great sympathetic occasions tenderness of the spinous processes, which is sometimes mistaken and unavailingly treated for spinal disease. The ganglionic system contains all the hereditary elements of health and disease, which latter may be considered as *latent* till they begin to be transmitted to some of the organizations which this system supplies. It is believed that the germs of the hereditary dyscrasia, latent in the sympathetic ganglia, may be discovered in the form of minute tubercles in the involuntary organs, in the spinal marrow, and in the brain."

Burt (*Characteristic M. M.*, p. 418) is therefore perfectly justified in saying that Psorin affects especially the great vegetative nervous system and through this the lymphatics and skin. In fact, there could not be a more close simile than Psorin is to many of our constitutional ailments. It certainly cannot be called isopathic, as the Psorin of Weber answers as well as that prepared by Hering, and all who tried it on their patients agree that it acts best in potencies; that it is so thoroughly diffused through the vehicle, that it is capable to act and to change the action of morbid protoplasm into healthy.

J. B. Bell considers the great field of Psorin debility independent of any organic disease, and Lippe gives it in great weakness, in debility from loss of fluids, or remaining after severe acute diseases. The same indication, in precisely the same words, is laid down for Cinchona, and we may well ask how to differentiate between them. But periodicity is not found in Psorin, and, just where Cinchona is indicated in such a debility, and fails to give relief, it proves that there is a latent psoric taint lurking which needs removing by Psorin, and thus frequently the whole weakness will be wiped out. Haynel gives us such a case where, after a severe pneumonia, Psorinum alone was able to give health back to the poor sufferer.

Frost says: "Doubtless the skin is the primary and preferred form of development of all chronic as well as of all acute dis-

eases," and old women will tell you that tinea capitis and crusta lactea are beneficial to the child and must not be interfered with. And thus we again find Psorin showing a primary action on the external as well as on internal skin. Lippe: Dry or moist, fetid, loathsome eruptions on the head; pimples and ulcers on the face; soreness of the corners of the mouth. Raue: Urticaria, after suppressed itch, coming out after every exertion; dry, tetter-like eruptions in the hollow of the knees. Hering: Inveterate cases of itch; repeated outbreaks of single pustules after the main eruption is gone. Guernsey: Moist itching condylomata. Williams (*H. M.*, iv, 398) prefers the low dilutions in tinea capitis and other eruptions. Preston (*A. J. H. M. M.*, iii, 104) cured a severe case of psoriasis diffusa syphilitica with the third; we might multiply cases, but let that suffice.

Frost again remarks: "The relations between the sympathetic ganglia and the cerebrospinal system are still but imperfectly understood; but at any rate enough is known to establish the connection of the sympathetic chain with the cerebrospinal system, and it would be wrong to consider the trisplanchnic an isolated or self-acting system, although we may perfectly agree with those physiologists who consider each and every ganglion as partly independent and able to act by itself when necessary. If proof were needed, the experiments by vivisection would establish this point beyond controversy."

"The mind is deranged; the heart is sick; he has the spleen," are expressions used in our daily vocabulary, showing clearly the sympathy between the trisplanchnic and the cerebrospinal system, and the ancients again hit the nail on the head by calling the former "the sympathetic nerve." No wonder then that we find in psora as well as in Psorinum so many symptoms hinting of affections of the cerebrospinal system, especially where no outlet is given to the lurking poison through the external or internal skin. Hence we find "anxiety about the future; despair of recovery; hopelessness; ill humor; trembling and palpitation; restless sleep, with horrible dreams." Hering (*Analytical Therapeutics*) gives us several model cures by Psorin. Thus, page 84: "Feels the greatest anguish in the head, with a whirling before the eyes, from 5 A.M. to 5 P.M., since two years; only when he

takes his meals he ceases moaning ; his appetite is good. A woman became melancholic after suppressed itch ; emaciated, pale, earthy complexion ; weakness of limbs ; flushes of heat and palpitation prevent sleep ; sleep comes towards morning ; would like to stay in bed until midday ; aversion to work ; indifference ; weeping ; seeks solitude ; despairs of recovery ; is irritable and forgetful. A man, insane on religion, had frequent attacks of epilepsy from childhood. Psorin<sup>19</sup>, in water, improved the mental condition and epilepsy.”

The headache and vertigo of Psorin seem more of a passive order, a stagnation compressing the brain, and we find therefore among its symptoms : cloudiness, as if from intoxication ; pressing frontal headache, as if the brain had not space enough in the skull ; heaviness of the head ; fulness of the head during mental labor ; vertigo, especially in the morning. And among the recorded cases we may mention one by Dr. Wesselhœft (*Record*, 1871, p. 182) : “ Headache for twenty years ; pain begins over left eye and goes to the right, increasing from hour to hour ; then diarrhœa and nausea, finally bloody vomiting ; dizziness, which obliges her to lie down ; black and blue stars before the eyes ; veins of temples much distended ; the day before the headache, *inordinate appetite*, and also during the first hours of the pains ; headache aggravated and brought on by *change of weather* ; soreness of stomach, sensitive to touch and pressure of clothes ; catamenia perfectly regular. Psorinum<sup>200</sup>, two doses in water, morning and evening, for four days, produced an entire cure. The same author (*Transactions of Mass. H. M. S.*, 226) gives us also as a characteristic of Psorin : “ Headache from repelled eruption, and all *headaches preceded* by spectres. Silicea when headache is followed by them.”

Dr. G. S. Norton (*N. A. J. of H.*, xxiii, p. 353) believes, that Psorin ought to be more used than it is, particularly in those old chronic cases we so often meet. Ciliary blepharitis, commencing in the right eye and extending to the left ; worse mornings, and during the day. Old chronic cases of inflamed lids with no marked symptoms. Searle (*Am. Obs.*, Dec. 1872), cured with it a case of pustular keratitis. The young girl, eight years old, was confined for six years in a darkened room, with no benefit. Lids



spasmodically closed; lachrymation and intense photophobia; pustular eruption on the face; both corneæ full of pustules, ulcers, and scars of the old ones; bowels costive, appetite poor. Cured in three weeks with Psorin<sup>30</sup> and Silic.<sup>30</sup> Symptoms 45 to 84 give us a perfect picture of ophthalmia scrofulosa, of the florid as well as of the torpid variety, and in rheumatic ophthalmia, where other remedies fail, the physician will do well to recollect this latent Psorin, and admire the magic effect caused by a few pellets of this drug.

Symptoms 84 to 105. *Otitis externa, media et interna; otorrhœa*, with fetid discharge; tonsillitis, with difficulty of swallowing, the submaxillary glands swollen; a picture too often seen in our dispensaries and rarely entirely eradicated. Although we cannot remove the cause of proletarian ailments in many cases, let us be thankful that we have in Psorin a remedy to mitigate the evil.

Psorinum in rheumatic *carditis* (*Transactions Mass. H. M. S.*, 255). Dr. Weld treated a girl of eleven years, light complexion, full face, ruddy cheeks, who had been ill about a week at time of first visit. Four years previously she had had a severe rheumatic attack. Pulse 144, skin dry; pain in head and limbs, but more particularly in shoulder; dyspnœa, with pain in region of the heart. Aconite, Arsen., Spigel., and Cannabis, were administered in various potencies, without effect. Effusion took place; sounds of the heart became indistinct; bellows murmur with the first sound; inability of lying down. Psorinum<sup>30</sup>, a powder at 6 A.M. By noon very much relieved. Two other doses only were given, and the effusion being absorbed the dyspnœa vanished. Landesmann (*Record*, 1873, p. 113) reports a case of *stenosis ostei venosi sinistri*. Man, æt. 80. Purring sound in the region of the apex; lips cyanotic; dyspnœa and shortness of breath when walking in the open air, better when lying down. Psorin<sup>6</sup> smelling. Relieved at once from dyspnœa; purring noise unaltered. (It could not be expected, that any remedy at such an age could remove an organic defect, but still even the alleviation is remarkable.)

We feel astonished to see so few cases recorded where Psorin was given in pulmonary diseases. Haynel gives us one case, where, in a tedious pneumonia, resolution was established by the

use of this remedy. According to the symptoms it ought to be rather frequently indicated in that caseification so often seen in the psoric constitution after pneumonia, especially as late researches consider also true tuberculosis an emanation from a preceding inflammatory condition, whose only characteristic is the giant-cell (*Virchow's Archiv*, vol. 63, April, 1875). In comparing the symptoms of phthisis pulmonalis with Psorin, it really appears as a similitum to this plague of our country.

Hartshorne (*Essentials of Practical Medicine*, 161) gives thus in short the symptoms and course of phthisis pulmonalis: It may begin after a severe acute bronchitis, or more gradually with an apparently slight hacking cough (compare symptoms 280–290), or with a hæmorrhage, or with dyspepsia (185–195), and general debility, or with chronic laryngitis. Slowly increasing, the pectoral and constitutional disorder becomes developed. We have then pains in the chest (293–310); frequent and severe cough (314–319); hæmorrhage and pallor (43); acceleration of the pulse, and elevation of the temperature; emaciation, amenorrhœa, night-sweats. Appetite is variable, digestion usually not vigorous (170–174). We see that many of its symptoms are found in the pathogenesis of Psorinum, and we may say with Emmerich (*Archiv*, 17, i, 142), that Psorin is a sovereign remedy in diseases of the chest. Under its use we frequently witness the appearance of an exanthema, sometimes of long duration, and obstinately refusing to yield. We should rather be glad at this effort of nature to rid the patient of the *causa peccans*, and great care is necessary in its treatment. Instead of an exanthema we see sometimes only a critical sweat, or a specific sweat. In many cases, where every remedy failed, Psorinum may still lead to a cure. Baertl (*A. H. Z.*, 5, 107) witnessed happy results from the use of Psorin in phthisis pulmonalis purulenta.

Especially in abdominal disorders, Psorin has won its crowning glory, and many an infant's life has been saved by its timely application. Dr. C. C. Smith (*Med. Invest.*, ix, 7) highly praises Psorinum<sup>200</sup> as of infinite value in cases of cholera infantum which did not respond promptly to the indicated remedy. Such children mostly have dirty, yellow, greasy skins, with a partially developed eruption on their forehead and chest, with constant fretting and

worrying. The stools are usually horribly offensive, nearly painless, almost involuntary, dark and watery, and most from midnight to noon, or only at night, and most towards morning; there is excessive prostration and profuse perspiration from the least exertion, and at night. P. P. Wells (*A. H. R.*, iii, 24) also characterizes the stool of Psorin as dark-brown, very thin and offensive (compare symptoms 240–255). Ruckert (i, 818) gives a case of constipation cured by Psorin. A girl of three years suffered from birth with constipation originating from inactivity of the rectum; every discharge from the bowels was excessively painful. Sulph., Alum., and Opium produced only transitory amelioration, but Psorin<sup>30</sup> cured the constipation radically (*Hyg.*, 3, 85).

The debility so characteristic of Psorin, shows itself also in the urogenital organs (250–270), and in many a case the appearance of an eruption relieves the other symptoms. Goullon, Sr. (*Archiv*, 14, 2, 136), mentions the case of a boy suffering from inguinal hernia, which Psorin<sup>30</sup> cured, after producing a moist, itching, burning eruption, discharging an acrid fluid on the internal surface of the prepuce, and on the corona glandis. Atomyr (*A. H. Z.*, 4, 13) cured a case of moist, itching, burning condylomata, with burning pains during micturition, with the same potency. Goullon, Sr., even recommends its application in hydrocele, inasmuch as the accumulation of the fluid is in most cases produced by venous stagnation, and Psorin will excite by its action the sympathetic system to a more vigorous action.

Whether it has a powerful action on the female sexual organs is still in doubt. Symptoms 268 and 269 give us menses eight days too late and the discharge less than usual. Many of the symptoms of Psorin remind us of Sepia, and we do not doubt, that in psoric females its action would be beneficial. We want more female provers, and we would like to see Psorin more frequently applied where other symptoms may lead us to its use.

Whatever psora may be, identical with scrofula or a different combination out of the infinitesimal changes of nutrition, so much is certain, that all is well as long as the skin bears the brunt of the onslaught, and we have a right therefore to expect in Psorin also cutaneous symptoms pre-eminent; this expectation has been verified over and over at the bedside of the patient.

We mentioned already that Lobethal (*A. H. Z.*, xiii, 322) favors the use of low triturations and dilutions of Psorin, as well in recent itch, especially the dry one, as also in those sequels arising from driving the itch from the skin to internal organs. In many of the cases which German authors mention under "Kraetze" we rather see the "constitution dartreuse" of the French, and a comparison of the symptoms of Psorin with those of Sulphur as well as with those of Graphite is desirable. Rückert (iv, 255) mentions a whole lot of crustaceous eruptions, cured by Psorin, where Sulph., Graph., Lycopod., and other antipsorics failed. In nearly all of them, the aggravation till midnight, the unbearable itching, burning, the foul discharge accumulating under the crusts, the swelling of the glands, and the melancholy and irritability produced by the eruption, are characteristics of psora as well as of Psorin. In Psorin we find profuse, colliquative perspiration, whereas Graphite often shows us a dry skin without suppuration; in Psorin the efflorescences discharge an acrid, even fetid fluid, with intolerable itching, whereas the eruptions of Graphite give us a sticky glutinous fluid; to differentiate between Sulphur and Psorin is already more difficult, especially if it is true that all chronic diseases are located in the ganglionic nervous system (Burt, *l. c.*, 484), which is the grand centre for the action of Sulphur as well as of Psorin. Only the totality of the symptoms can decide on the selection.

With the words of no less an authority than Carroll Dunham (*U. S. M. and S. J.*, iv, 63), we close our slight tribute to this valuable remedy: "It is probable that *whatever substance*, from whichever of the kingdoms of nature, has the power to modify or alter, *in any way*, any of the functions and tissues of the healthy body, is capable of being used as a remedy for diseased conditions. When we know *HOW* it alters and modifies the functions and tissues of the healthy body (a *proving* shows us *how* it does so), then the law *similia similibus curantur* teaches us in what cases to apply it as a remedy."

**ARTICLE XIV.—Carcinoma.**

BY J. GRANT GILCHRIST, M.D.

IN the *North American Journal of Homœopathy*, vol. vi, August number, will be found an elaborate article from the clinic of Professor Nussbaum, of Bavaria, on "Carcinoma from a Clinical Standpoint," which, in spite of the author's deservedly great reputation, we cannot pass by without comment. The points to which attention is invited are as follows:

- 1st. Early removal is recommended.
- 2d. Curability doubted by medicinal agencies.
- 3d. The disease is supposed to be, *first*, local, *then* constitutional.
- 4th. The caudate cell not acknowledged to be pathognomonic.

To justify this paper, if a writer of the Professor's eminence needs support, Dr. Lilienthal, for the most part, accepts his line of argument. At the risk of being thought presumptuous, we beg leave to dissent entirely from each of these positions. It will be necessary, to a clear understanding of the subject, that we take up the consideration of the four topics in a somewhat different order from that above.

*First.* Are cancerous growths *first* local, and subsequently constitutional? We think proof in the negative will not be hard to find. Allopathic writers, even, are in dispute on this point, and among them the weight of testimony is mostly in support of our position, viz., that the tumor is but a peripheral symptom of a diseased organism, and its location is dependent entirely upon controlling circumstances, as the reception of injury. If we examine the structure of a cancerous tumor, of the scirrhus variety, we will find it largely albuminoid, and greatly deficient in fibrin. We also find that it is much more common among women than the opposite sex, and also that women are more prone to loss or misapplication of albumen than men. If the theory of Dr. Gregg is accepted, that phthisis is dependent upon a loss of albumen, we can see that there is somewhat of similarity in the etiology of the two conditions, *i. e.*, consumptive and carcinomatous, inasmuch as neither is inherited as such, but the disposition to waste of albumen may be hereditary, and thus indirectly produce a cancerous or phthisical descent, as other circumstances may deter-

mine. We also find, that the structure of these tumors is peculiar to themselves; that the tissue entering into their formation is not found, in a normal condition of the body, in that locality at least. The tissue may have been normal originally, but has been metamorphosed by pathological processes into something entirely unlike its former condition. We have long been in the habit of distinguishing the different varieties of tumor in this way; finding the benign to consist of tissue normal in location, but abnormal in quantity; the semi-malignant, abnormal in locality, but normal in other parts of the body; the true malignant tumor tissue abnormal in every respect.

We all know that many carcinomatous tumors do not make their first appearance as such; that is, they have sometimes appeared as a cancerous degeneration of a benign growth. These benign growths do not so degenerate, as a rule, unless the patient is *visibly* in poor health, and usually in those who are dyspeptic, and with the characteristic mental depression. It has been observed, moreover, that such patients are dyspeptic *because of the mental depression*, and not *vice versa*. We all know of cases in which warts, or condylomata, or even fibrous growths, have existed for years without producing any discomfort, in spite of frequent injury received; and, again, how one of these cases takes on a rapidly malignant action, finally, after a very slight and trivial injury.

We now arrive at a point where there is good reason for holding to one of two theories, perhaps reconcilable with each other, but at least as accounting very well for the constitutional origin of the tumor. One may be stated to be the misappropriation of albumen, and the degeneration of already existing cells in the tissues of the tumor. The other, and the theory I have already adopted, that the dyspeptic derangement is accompanied by an abnormal cell development; in other words, deficient or weak assimilation, resulting in poorly nourished or imperfectly developed cells. It will add to the strength of either position to cite the fact, that each of the small number of cancer patients cured, were first cured of their dyspeptic symptoms, and became more cheerful in disposition. Another fact that might be noticed, is that cancer has no choice of locality in such a patient, *i. e.*, dyspeptic and

gloomy, but comes wherever circumstances give it a chance. Now this part of the question hangs entirely upon one point, viz. : Does the tumor, or rather the cancer, appear before or after the digestive derangement? My experience has been, after.

*Secondly.* Is there such a thing as a true cancer-cell? Let us first see what our surgical writers say on this point.

Erichsen says: "For although the unaided eye of an experienced surgeon may in many cases recognize the true character of a tumor, and the microscope in some few instances fail to reveal it, yet there can be no doubt that, in many cases, it is only by the aid of this instrument that the real nature of the growth can be determined. It is doubtless true that every one of these microscopic elements may separately occur in the normal tissues and secretions of the body, some in those of the adult, others, as the caudate and fusiform corpuscles, in infancy and the fœtus; but though this be the case, it does not appear that they are ever found in any tumors except those of a cancerous nature; and in these it is rather by the aggregation of these appearances, than by any single one in particular, that the true character of the disease is determined."

Helmuth says: "The granular deposit consists mainly of cells and free nuclei. In shape these cells vary greatly; they may be round, oval, angular, pyriform, or caudate. This multiformity of cell structure constitutes one of the most important diagnostic marks of malignant growths. . . . In the same specimen we may also find crystals, oil-drops, granules, and old degenerated cells."

Paget says: "The question is often asked, what are the characters of the true cancer-cell? or, has the microscope discovered any structure which is decisive of cancer wherever it is found? The answers may be: 1. When cells, such as are described, are found alone, or chiefly composing a tumor, we may be certain that the tumor is a cancer. We may therefore regard these as especially cancer-cells." . . . "In shape they are various. Usually a large majority are broadly oval, or nearly round, yet many cells have one or more angles, or outdrawn processes, and some are pyriform, some fusiform, some reniform, some nearly lanceolate." . . . 2. "When a tumor is composed, chiefly or alone, of corpuscles, such as the nuclei described, or any others which we can trace, as

rudiments or degenerations of cancer-cells, the diagnosis of cancer is not less certain. Structures such as these are found composing none but cancerous tumors." . . . "The nuclei are like those of the typical cancer-cells. They are oval, or round-oval, having a long diameter of from  $\frac{1}{800}$  to  $\frac{1}{400}$  of an inch, bright, pellucid, perfectly defined, largely and often doubly nucleated." From these quotations, and they have been made at random, it would appear, that whether the caudate-cell alone is diagnostic of cancer, its presence is needed with others to make it out, and that the use of the microscope is a *sine qua non* in determining the nature of morbid growths. My own examinations have revealed, that while we have sometimes, but very rarely, found such cells in tumors that were unmistakably benign, they are only in such as we have reason to believe may degenerate into cancer. They were more frequently found in semi-malignant tumors, and were *always* found, in greater numbers, in the true cancer. We must not forget that benign tumors sometimes take on a cancerous degeneration, and we find caudate cells in all such growths; with each recurrence of a recurrent fibroid tumor (semi-malignant variety), we found an increasing number of these cells. In each recurrence, again, of a scirrhus growth, or deposit, it might be called, these cells were also in greater number.

Unless, therefore, we admit this cell to be the distinguishing element, we are almost deprived of any certain diagnostic test of the malignancy of a tumor, unless we take the old one, that it is cancer when the patient dies, and not if he gets well.

*Thirdly.* Having now considered briefly the etiology of cancer, and the question of the cell, we come naturally to that of cure; and will take up, first, the Professor's assertion, that excision (early) is the only proper treatment.

It cannot be disputed that fact is of more weight than theory in settling matters in dispute. We feel sure that the facts, so far as they can be obtained, are all against this assumption. Statistics are accessible, leading one to infer that, by removal, death is never arrested, frequently hastened, but oftener may be certainly predicted from a recurrence. Not seldom the secondary disease is more painful than the primary, and always runs its course with greater rapidity. Let us look to our authorities again.



Sir Astley Cooper says: "In only nine or ten in a hundred did the disease fail to return in three years." Sir Benjamin Brodie "finds such cases usually prove fatal in from two to three years after the operation." Erichsen says: "The majority of the patients operated upon die eventually, and usually within a limited time, from a recurrence of the disease." Gross finds death to follow, in from nine to eighteen months; and Paget, while admitting that patients not operated upon have an average duration of life of four years, those who *have* been so treated a little more than that period, yet acknowledges its almost certain recurrence, and a much more rapid termination than in primary cases. Gibson says there is "hardly a case on record where the operation has succeeded." Skey: "None but a rash operator would undertake it." All authorities agree that even when seen in the very earliest stages, any attempt at removal is followed often by an increased morbid action, when otherwise, as has frequently occurred, the tumor would remain quiescent for years. Finally, to finish our quotations, Helmuth says: "Scirrhus generally proves fatal in from ten months to two years. In some cases, however, if inflammation does not set in, the cancer may exist for years, without any great impairment of the general health."

Surgeons of experience will agree that the primary tumor, particularly of the scirrhus variety, is not an *intensely* painful affair, if unirritated by handling or pressure; the pain even then is not of extraordinary severity, or of great duration. When such a tumor has been removed, as occurred quite frequently early in my surgical practice, if the recurrent disease was in the same locality, and not by secondary deposit in distant organs, it went through a course as follows: The cicatrix was rarely fully formed; skins over with a *very* thin skin, of a pinkish color, and with fine ramifying vessels distinctly visible all through it. Small growth, here and there in the scar, something like cheloid, with great sensitiveness to the touch. About the time the cicatrix appears to be complete, these cheloid-like elevations became abraded upon the apex, and rapidly ulcerated, one ulcer running into another, until, in a very short time, the whole scar is replaced by the pathognomonic ulcer; this is too well known to need description. The pain is now most intense, and rapidly wears out the patient.

Secondary deposit goes on rapidly, and from six to eighteen months suffice to produce death. One case had terrible clonic spasms, in one of which her left hip was dislocated.

My experience has taught me, that the degeneration of a primary scirrhus tumor is not accompanied by as extensive secondary deposit, local pain, or rapidity of death, as in cases which have been operated upon. Hence, I always advise against an operation, but if the patient should insist on one being performed, always prefer the knife. Escharotics work slowly, and the inflammation they necessarily set up rapidly assumes the cancerous characteristics.

*Lastly*, are they curable? We answer, unhesitatingly, yes. Professor Helmuth, in his *System of Surgery*, on page 220, says on this point: "It is in the treatment of these diseases that homœopathy has won some of its most brilliant triumphs, and even our opponents cannot deny that instances have occurred in which well-authenticated cases of cancer have been cured by the properly selected homœopathic remedy. We do not pretend to assert that *all* malignant growths are amenable to internal medication, but we do claim, that in nearly every instance the sufferings can be mitigated, and in some cases a radical cure effected."

Why, then, it may be asked, do we not oftener cure them? Because we keep thinking of *cancer*. If we could leave the idea of the tumor or ulcer out of our calculations, and address our remedies to the patient, to the gastric derangement, or the loss or misapplication of albumen, we would now and then succeed. There *can be no cancer in a healthy body*, and it cannot be cured until the morbid condition feeding its growth is corrected.

Out of a number of cases treated, we have succeeded in curing but two. In each of them the tumor became atrophied, in one case gradually disappearing, in the other cast out through an integumental ulcer, and in neither was there a trace of cachexia behind. In one case the remedy was *Apis*, in the other *Conium*. In each of them the cure was from the centre to the periphery, *i. e.*, from the gastric trouble to the tumor; the patient first became well, and the tumor disappeared.

Our worthy friend deals rather unjustly with us. If Dr. Gilchrist will look at our remarks in the August number, p. 98, he will see that we distinctly consider true cancer (not epithelioma) always a dyscrasia, a protoplasmic disease, and that its hereditary character is fully established. Furthermore, in our notes to tuberculosis pulmonum (*N. A. J. of H.*, vol. xxiii, p. 206), we state our conviction, that we consider tuberculosis and cancer not identical, but children of mal-assimilation, the fruits of faulty protoplasma.

The other points objected to, are 1. Dr. Nussbaum recommends early removal. 2. Medicinal agencies hardly ever cure a *true open cancer* (not scirrhus). 3. The caudate-cell is not acknowledged as pathognomonic. Now here Dr. Gilchrist forgets the very thing which Nussbaum insists on: *early, THOROUGH AND EXTENSIVE* operation, whereby not only all the cancerous matter, but also the *adjacent tissue, so disposed to regional relapses, must be THOROUGHLY removed.*

Statistics tell different stories, just as it suits our convenience; Nussbaum's and Etiolle's statistics prove the very contrary, the benefit of an operation, and they were only left out as taking up too much space. The whole question hinges not alone on the early time of the operation, but especially on the *thoroughness* with which the operation is performed. Certainly when thorough and extensive operation is neglected, when carcinomatous tissue is left behind, a relapse in an aggravated form must surely follow. I acknowledge of favoring the application of the ferrum candens, when necessary, for it does its work in a thorough manner. The latest surgical method of treating scirrhus is strangulation with acetic acid. This may be tried when the knife is objected to. The very moral depression, of which such patients suffer, should lead us to give them all the relief possible.

It is true that scirrhus is not *intensely painful*, but any one who has seen the unbearable pain, the constant suffering of an open cancer, will try his utmost to keep his beloved ones from such tortures, as it was my misfortune to witness, with no opiate to lull consciousness for a few moments.

My experience has taught me, and this agrees with the experience of Nussbaum and other European surgeons, that those who passed through an early, thorough, and extensive operation, be it by strangulation or by the knife, do enjoy an interval of comparatively good state of health, and even if death should set in a few months sooner, it will be more bearable than continuous suffering for several years.

That remedies do not cure nor even relieve an open cancer, I know to my sorrow. If there are well-authenticated cases (microscopically proven), my readings have failed to find them. *Prevention is better than a cure*, and here I fully agree with my friends (*N. A. J. of H.*, xxiii, p. 209). Yes, *there can be no cancer* in a healthy body, and it cannot be cured till the morbid condition, feeding its growth, is not only corrected, but entirely removed.

About the caudate-cell, *vide* the different articles of Dr. Arcularius, in the *N. A. J. of H.*, although even here different opinions prevail, and some of our best histologists deny any particular quality to these giant cells.

S. L.

**ARTICLE XV.—Physiological Psychology.**

BY C. G. RAUE, M.D.

THE external stimuli, or the sounds which originate in the various ways by which the surrounding air is thrown into a state of vibration, have to take the following course before they reach the recipient faculties. At first they wind their way through the external meatus, and cause a corresponding vibration of the membrana tympani. This vibration is transferred through the ossicles of the tympanum to the membrane covering the fenestra ovalis, which again sets into vibration the fluid contained within the labyrinth, and thus the original external stimulus finally reaches that wonderfully constructed mechanism within the labyrinth. There are about three thousand fibres of various length and tension contained within the walls of the cochlea; they are regularly arranged side by side like the keys of a piano, and their functions have been explained by Helmholtz through the sympathy of sounds. It is generally known that strings of the same length and tension, when in close neighborhood, commence to vibrate, if only one is set into motion, and that they all sound if the impulse upon the first is strong enough to cause a sufficient intensity of vibration. In case, however, of strings of different tension and length, although lying in close neighborhood, the vibration of one may cause the other to move but not to sound, as the tempo of their vibrations is altogether different. In like manner, according to Helmholtz, out of the numerous and variously tuned fibres of Corti, only those answer to external impulses which correspond according to their length and tension with these impulses, and thus it is possible, for instance, to discern in a complicated piece of music the many and various notes even singly. Of course this requires a perfect and well-tuned mechanism of Corti's fibres within the ear. But even here the course of the external stimulus has not ended, for these fibres do not hear, they merely vibrate, and not until this peculiar stimulation is transmitted by special nerve-filaments of the auditorius to the central organ is this vibration perceived as sound or noise.

## § 77. THE SENSE OF SIGHT.

This is the most perfect of all the senses. After the optic nerve has made its entrance into the bulb of the eye at a place called the papilla nervi optici, or sometimes the blind spot of the retina, from the fact that it is not susceptible to the impressions of light, its filaments, losing their medullary substance, spread in all directions, and form partly the anterior layer of the retina, which joins by its limiting membrane the hyaloid membrane of the vitreous body. Back of this expansion of the non-medullated optic nerve-fibres there have been distinctly traced several other layers, which constitute the retina, and which, in the order from front to back, are as follows: A layer of ganglion cells; a layer of gray nervous substance, which is a fine granular layer, and which has also been called the inner fibrous layer; a layer of granule cells, or the inner granular layer; an intermediate granular layer, or the outer fibrous layer; an outer granular layer, and the layer of rods and cones. The terminal parts of these rods and cones consist, according to recent researches of Max Schultze, of extremely fine and transparent lamellæ, which are bounded by the dark pigment of the choroidea. They appear of different thicknesses, but are so fine that from thirty thousand to seventy thousand would be required for one inch of thickness.

The various colors of a soap-bubble furnish the instance most popularly known, in which fine lamellæ, although colorless in themselves, assume various colors when they reach a certain degree of tenuity, and the degree of tenuity determines the color which they reflect. It is possible, then, although it is not proved as yet, that this terminal structure of the rods and cones of the retina responds to the various colors of light in a similar manner as the fibres of Corti in the cochlea answer to their corresponding sounds; and, as Max Schultze has further observed, that the terminal filaments of the optic nerve-fibres are accessories to the rods and cones, on which they exteriorly lean, it appears, and is thus histologically scarcely to be doubted, that the vibrations of light, first communicated to the lamellæ of either the rods or cones, accordingly as they correspond, are thus transmitted to special terminal nerve-filaments, by which they are conveyed to the central

organ. It is thus not the eye that sees, although its wonderful construction is the necessary condition for the reception of the vibrations of the ether, causing light.

#### § 78. STIMULI, EXCITANTS, OR EXTERNAL ELEMENTS.

It may here be stated in general, that it is not the external things themselves which act as stimuli upon the recipient organs, but that it is only certain qualities of the same which, being varied and different, require for their reception sensory organs constructed in reciprocal relation to them. And from this consideration alone it may be surmised that the knowledge we gain of the external world will never amount to an *adequate cognition* ("An-sich-erkenntniss"), but will remain forever a *cognition of its effects* ("Wirkungs erkenntniss") only.

As far as the luminous stimuli have been investigated, we are told by physicists that they consist, like those of heat, of various vibrations of the ether. The relatively greatest rapidity is produced by the violet rays of the spectrum of the sun, while the relatively slowest motion is that of the red rays. Above and below these in rapidity of vibration are still others, which, however, cease to excite our visual apparatus under usual conditions. Those equalling and exceeding the violet rays in rapidity of vibration are called actinic (chemical) rays, while those below the rapidity of the red rays are perceived as heat. Now, if all this be correct, and if smell and taste be perceivers of the chemical constitution of external bodies, and the nerves of general sensibility be perceivers of heat (beside other qualities), we would recognize the most rapid vibrations of the ether by smell and taste, and the slowest by the nerves of general sensibility. And provided that these investigations are correct, we would be capable of seeing chemical as well as thermic vibrations of the ether, if the terminal apparatus of the optic nerve had been made responsive to them. It appears, then, that what we call light, luminous stimulus, or visual excitant, is practically limited to fixed boundaries by the terminal structure of the eye. And there are indeed cases of innate incapability for seeing certain colors, as for instance the extreme red, which would denote an unusual narrowing of the natural visual limit. An extension above or below the fixed

limits of normal human vision is unknown, and whether it may or may not exist in the various species of animals has never been ascertained.

The *auditory* stimuli consist of vibrations of the air, which according to Helmholtz's measurements, range between sixteen vibrations to thirty-eight thousand in a second. This, however, relates only to very fine ears; less delicately constructed organs do not perceive audible vibrations to such an extent. Thus, for instance, it is asserted that some people are absolutely deaf to the song of a lark, the chirping of a locust, or the scream of a bat, but with no other than this special auditory disqualification. The real musical tones are limited in their rapidity to a range between forty and four thousand vibrations in a second, while, as has been stated, the range of audible sounds in general is much wider.

The question, then, comes up, do vibrations that overpass these limits at either extreme produce no sounds whatever? Or, are there no other sounds than those which lie within the boundaries of sixteen and thirty-eight thousand vibrations in a second? For the human ear, it seems, there are none; but it is surely conceivable, that among the lower orders of animals some may possess organs so constructed both for producing and receiving sound, that for them there exists a range and a variety of vibrations where the human ear perceives absolutely none.

The stimuli which act upon the *olfactory* and *gustatory* nerve-fibres are probably, as has been stated, related to the chemical constitution of external bodies, and as such would exceed in rapidity the visual vibrations of the ether; we have no further knowledge of them.

The stimuli for the sense of *touch* and the *muscular sense* seem to consist of various degrees of pressure and traction upon the corresponding sensory nerves. It does not matter whether this pressure or traction be caused by the motion of external things, or by the motion of our own muscles in relation to them. In either case, it is motion by which we become cognizant of the quality of resistance which external things manifest when in contact with our own body, and which we recognize by the joined action of the sense of touch and the muscular sense. We may state,

then, that even in the case of these senses the essential character of their stimulation consists of *motion*.

This relates probably in some degree, also, to the stimuli which act upon the sentient nerves, or the sense of *general feeling*, although a very important part of their action seems to consist in the perception of heat, which again, as has been stated, is motion, namely, the vibration of the ether, of less rapidity than that of the red rays of the spectrum of the sun.

The nature of the stimuli by which the *sympathetic* nervous system is affected, is wrapped in still greater mystery, but consists probably to a great extent of the molecular motions which unceasingly are going on within the living organism. As long as they proceed in harmony, they are not perceptible; only an excess or deficiency in their action, that is a disturbance in the equilibrium of the natural molecular motion, manifests itself at once in corresponding sensation. One must have been a prover of drugs in order to be capable of appreciating this wonderful reaction of the human organism against even the finest agencies.

We may, then, sum up and define the various stimuli which excite corresponding sensory organs, as agencies, the essential nature of which consists of *motion*; of motion of the ether, of the air, of solids, of fluids, and of molecules.

#### § 79. THE SENSORY NERVE-CENTRES.

The origins of the nerves are far from being discovered. We know only that they centre in the so-called gray matter or in the vesicular nervous substance, which is distinguished by its dark reddish-gray color, and soft consistence. It is composed in great part, as its name implies, of vesicles or corpuscles, commonly called nerve or ganglion corpuscles, containing nuclei and nucleoli. These nerve-corpuscles vary in *size*, some are larger than others; and *shape*, some have one, two or more processes, which occasionally divide and subdivide into numerous branches, and terminate in fine transparent fibres, which either become lost among the other elements or may be traced until they become continuous with an ordinary nerve-fibre.

Of gray matter we may distinguish the following groups:

1. The peripheral layer of the cerebrum, or its *cortical gray*;



2. The conglomerations of gray matter in the cerebral ganglia (corpora quadrigemina, thalami optici, and corpora striata), the *ganglionic gray*;

3. The gray matter which lines the ventricular surfaces from the tuber cinereum to the conus medullaris, the *central* or *cavity gray*;

4. The gray matter of superficial and deep layers of the cerebellum, and the gray substance which lies imbedded between the fibrous matter of the cerebrum and the cerebellum; and,

5. The gray matter of the numerous ganglia outside of the brain and spinal cord. (Compare Meynert in Stricker, 1872.)

The *optic nerve* arises from the ganglionic gray of the thalami optici, of the corpora geniculata, which appear like appendices to the thalamus, and of the corpora quadrigemina. These variously derived fibres combine to one flattened band, the optic tract, where they again are joined by some fibres issuing from a small yellow stria of spindle-shaped nerve-cells, which is inserted between the substantia perforata anterior and the optic tract. A similar augmentation of fibres takes place in the anterior surface of the chiasma or commissure from the lamina cinerea terminalis and the pedunculus corporis callosi. (Compare Henle, *Nervenlehre*, p. 248, etc.)

Physiological experiments do not seem to agree fully with these anatomical researches. For, although the destruction of the corpora quadrigemina is followed by blindness, or the destruction of the bulbus by atrophy of the corpora quadrigemina (in both cases of the opposite side); experiments with the thalamus have not sustained its anatomical relation to the optic nerve. The fibres derived from it serve probably some other purpose or purposes, thus far unknown, while the actual capability of receiving the external luminous stimuli seems to be located within the corpora quadrigemina. The structure of these bodies is quite complex, and their connection with other parts of the brain is manifold.

The *auditory nerve*, Sömmering's eighth pair and Willis's portio mollis of the seventh pair, arises from the central gray around the floor of the fourth ventricle. According to Henle (*Nervenlehre*, p. 208, etc.), it has three nuclei from which it issues, a superior, inferior, and lateral. The relation, however, which these different

roots bear to the different parts of the inner ear, and whether the division of the auditory nerve into the *nervus cochleæ* and *nervus vestibuli* is founded in its different roots, or whether the additional fibres of the *nervus facialis* and *nervus intermedius* bring any new and peculiar elements into its functions, is not yet known.

The *olfactory nerve*, or the first pair of cranial nerves, is the only sensory nerve which takes its origin in the cortical gray, namely, in the inferior surface of the anterior lobe of the cerebrum. It arises from three roots, an external or long, a middle or gray, and an internal or short root. By these roots the nerve is connected with various parts of the lobe and the great ganglia of the brain. In uniting, these radical fibres form the olfactory nerve, which in its course forward expands into the *bulbus olfactorius*, from which numerous filaments depart to be distributed over the olfactory region of the nose.

The *gustatory nerves*, consisting of part of the *glosso-pharyngeus* and part of the *trigeminus*, arise both from the central gray of the floor of the fourth ventricle. (Henle, *Nervenlehre*, p. 221.) How they act together or differ in their function of gustation is entirely unknown.

A still greater want of positive knowledge (anatomically as well as physiologically), we meet when we wish to trace the nerves of *touch*, of the *muscular sense*, and of the "*common or general feeling*," to their respective origins. Indeed, in this respect, we know only that they arise from the central and cavity gray of the spinal marrow, with the exception of those sentient nerve-fibres which, as the greater portion of the *trigeminus* and the sentient part of the *glosso-pharyngeus*, take their origin within the central gray of the floor of the fourth ventricle. But as to the origin of their separate fibres as distinguished by different functional qualities we know nothing at all.

Lusanna thinks (Meissner's *Jahresbericht*, 1870), that the nerves of the muscular sense have their centre in the cerebellum, as injury or extirpation of the same is attended with a loss of equilibrium in motion, which equilibrium, according to his view, is sustained by a healthy operation of the muscular sense. But as, according to Schiff, those animals which have been deprived of their cerebellum, if they remain alive, regain after the lapse of

some time the regular use of their limbs, Lusanna's and also Flourens's hypothesis, according to which latter the cerebellum is the centre of co-ordinate motions, becomes doubtful, as an extirpated *centre* could hardly ever find its functions compensated by any other organ.\* In short, we are not yet able to trace the nerves of general sensibility to separate origins, which would in any way correspond to and explain their actually different functional qualities.

Regarding the "*molecular*" sense, if I may use this expression to signify the sensations which we receive through the ganglionic or sympathetic nervous system, it appears that its nerves originate in the gray matter of the very numerous ganglia outside of the brain and spinal cord, which are found in the two gangliated cords, one on each side of the vertebral column, from the base of the skull to the coccyx, and also numerous in such organs as minister specially to the generative and vegetative functions of life. The cells of the sympathetic ganglia have for the most part several processes; they are, as it is termed technically, multipolar. These processes are either continuous with nerve-fibres, or serve as communications with other cells. Beale and J. Arnold have independently discovered that in the ganglion cells of the sympatheticus there are two kinds of filaments, a *straight* one, and a *spiral* one wound around the straight one. As to the manner of their origin within the cells histologists do not agree, neither do they know the physiological meaning of these different processes. The sympathetic system is intimately connected with the cerebro-spinal centres by the rami communicantes, which consist of fibres running from the spinal marrow to the sympatheticus, and *vice versa*, from the sympatheticus to the spinal cord. (Compare Dr. Sigmund Mayer in Stricker, p. 809 et seq.)

#### § 80. THE SENSORY FACULTIES.

All these investigations do not, it appears, bring us much nearer to an understanding as to how and where our sensorial perceptions

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\* Still more recent experiments of Nothnagel, Fritsch, and Hitzig seem to place the centre of the muscular sense in the external end of the post-frontal convolution. (Brown-Sequard's Archives, 1873.)

take place. The terminations, however, of most of the sensory nerves have quite satisfactorily been explored and described, while their beginnings are still wrapped more or less in mystery. What has hitherto been taken for granted, that all the nerves arise from ganglionic cells, and that, therefore, not only sensorial perceptions, but all mental activities originate by some sort of chemical and molecular action within these cells seems likely to prove fallacious. If the latest researches of Max Schultze are correct, it appears that the nerve-cell is essentially only an enlargement with nucleus and nucleoli of the axis-cylinder; that, therefore, it does not represent the beginning, but is merely an intervening expansion of the nerve in its course. As such the bipolar cell is to be considered. In case of multipolar cells of the spinal marrow, from which, according to Deiters's discovery, an axis-cylinder issues to pass towards the periphery, while many other processes spread in different directions, the cell appears to be an intermediate station for the convergence of innumerable nerve-fibrils from different regions, in order to unite to and form one axis-cylinder. Even here the axis-cylinder cannot be considered as *originating* within the nerve-cell; it is only made up here like the bulk of a main stream, from numerous tributaries, the sources of which no one has yet discovered. The researches of Deiters make it also probable that the groups of ganglion cells, from which the cranial nerves arise, and which have been made known by Stilling as the nuclei of sensory roots, consist of cells of an entirely similar form as those of the anterior and posterior cornua of the spinal marrow, and that they, like these, send off only one axis-cylinder which passes towards the periphery, while the other processes divide into innumerable primitive fibrils. (Compare Max Schultze in Stricker's *Handbueh der Lehre von den Geweben*, 1872, p. 125 et seq.)

If, then, we regard these researches as correct, we would be further off from the discovery of the origin of the nerves, and what concerns us here especially, of the sensory nerves, than ever before. What thus far has been considered as the *source*, has now, under the trained eye of the histologist, been resolved into innumerable primitive fibrils that defy all tracing. The receptacles of the external stimuli and the laboratories for the sensations

derived therefrom are gone; the nerve-cells turn out to be mere stations, where primitive fibrils from various regions meet, in order to form new combinations. And what seems particularly ominous for the old belief, this beginning of the nerves corresponds exactly to their peripheral termination. Here as there a splitting into innumerable primitive fibrils. And to what purpose? To meet on the one side external stimuli, the exact nature of which is covered with mystery; and on the other side to communicate with a something that equally eludes our keenest scrutiny.

The honor is due to Henle, that amidst the strong current of scientific fashion and materialistic views he stands out boldly, and declares: "Only self-deceit can assert that a being (*Wesen*) which comprises all the manifold past and present modifications of our nerve-life into the union of self-consciousness, could be better understood by considering it a monad fixed in a certain place, than to regard it as an imponderable which pervades the entire body." (Henle, *Nervenlehre*, p. 14, 1871.) This verdict of a savant whom no one can accuse of ignorance of the anatomical and physiological researches of the present day, brings us a step farther in our investigations. His acknowledgment of an imponderable being, the soul, which pervades the entire body, places him in direct opposition with those who regard mental life as a chemical and molecular activity and development of the nerve-cells. It behooves us to examine more specially into the merits of this materialistic belief.

The belief that mental action consists in a chemical and molecular activity and development of the nerve-cells took its origin in the fact, that a destruction of the brain involves a cessation of mental activity. Later, more exact experiments showed that a separation of the brain from the spinal column, although it withdrew the parts below the separation from all influence of the mind, did not deprive these parts of the capability of becoming excited by external stimuli; a complete extinction of their sensibility could be induced only by their separation from the spinal cord also. These results, based upon these conditions, led to the belief that it was the gray substance in which all nerve force originated, and that the nerves themselves were only the conduc-

tors of this force. There is not a book on physiology where we do not find this view expounded and illustrated by the phenomena of the telegraph, to make it comprehensible even to the dullest mind. And as further microscopic investigations detected the gray substance as crowded with innumerable nerve-cells, the theory was enlarged by the additional point, that these nerve-cells were the real source of mental activity, or still more pointedly in the language of the materialistic school, that what we call mind consisted in the chemical and molecular action and development of these nerve-cells.

How slim a chance this belief will stand in the future may easily be judged, if the latest discoveries of Max Schultze, mentioned above, should prove to be correct. But even independent of them it has but an unstable basis. The experiments of Flourens, always cited in proof of this theory, do in reality deal it a disastrous, even fatal blow. This eminent physiologist removed the cerebrum slice by slice from pigeons, and the results consequent upon the operation are quoted in support of the view, that it is by the chemical and molecular action and development of the nerve-cells of the cerebrum, especially of its cortical layer, that mental activity is originated; but every anatomist knows that the cortical layer of the cerebrum is so thin, that it would be removed with the first slice. And this theory demands that with this removal there should be at least a proportionate decrease in the pigeon's mental faculties. Unfortunately the issue does not bear out these expectations. The pigeon retains its faculties *fully*, until the last trace of the hemispheres is removed, and then, and only then, it *at once* sinks into utter stupidity. If during this operation a small portion of cerebral substance, which principally consists of *white* matter, is left, intelligence retains its hold; and thus it is proved physiologically, that psychical functions may, and really do, continue in spite of the loss of a considerable portion of the cerebrum and most of its gray matter, and that, therefore, the nerve-cells cannot be the real source of mental development.

Beside this, the materialistic views encounter still other difficulties. "Although," says Henle, "a specific difference of the nerve-fibres may be denied, if their specific faculties are con-

sidered as reactions of the central parts from which they issue, the specific nature of their *terminations* cannot be doubted, as they react against external influences quite differently, and as especially the single sensory nerves show an exclusive demeanor towards the so-called adequate stimuli, light, sound, flavors, etc. Now, how is the 'conduction' of these adequate stimuli through the sensory nerves into the brain to be understood? It cannot be taken as a propagation of the vibrations of light and sound; the physical nature of the nerves forbids us to accept such a suggestion; besides, it is disproved by the fact that these nerves, between their terminations and the brain, can be excited only by general stimuli (pressure, electricity, and the like), and not by their adequate stimuli, as is conclusively shown by Marriotte's experiment, which proves the retina blind at the spot where the optic nerve enters. The vibrations, therefore, which the external stimuli cause in the terminal apparatus, must be transmitted to the nerve-fibres through which they pass, as an inconceivable quality, in order to be again transformed in the central termination of the nerve, where they finally are received as sensation. The theory is certainly not, as I have already remarked on some former occasion, characterized by any degree of simplicity. And this complication grows still greater by its application to those senses by means of which we receive impressions of the extension, form, and size of things. Is it conceivable that the nerve-fibres of touch and sight, after all the inosculation and decussations of their branches and bundles, should place themselves in the brain in exactly that order in which they issue from the terminal apparatus? And if this were not the case, or if, as it often happens by the transplantation of a piece of the skin, the position of the internal terminations become changed, what a confusion would it cause in the correspondence of the mind with the nerves of touch! About the same as would ensue if the telegraph wires were cut, and when repaired their ends were united in wrong directions. We escape all these difficulties if we place the nervous processes which manifest themselves in sensation and motion, in the nerve-fibres instead of in the gray substance, and thus admit that the sensorial perceptions take place within the sensory organs themselves. The connection between the sensory organs and the brain

remains nevertheless an indispensable condition. . . . But if usage constrains us to consider the external stimuli to pass through the nerves into the brain, we have an equal right to conceive the nerves as the avenues through which the psychical agency transmits itself outward." (Henle, *Nervenlehre*, p. 13, 1871.)

To this I shall add the following passage from Dubois-Rey-  
mond: "The minutest knowledge of the brain, the highest which we can obtain of it, reveals nothing in it but matter in motion. By no imaginable device in the arrangement and motion of material particles, however, can a bridge be made into the domain of consciousness. Motion can produce only motion, or be transformed back to potential energy. Potential energy can produce only motion, can sustain static equilibrium, can exercise pressure or traction. The sum of the energy remains in all these processes ever the same. More than that which is conditioned by this law cannot take place in the corporeal world, and not less either; the mechanical cause is spent entirely in the mechanical effect. The mental processes, which are accompanied by certain material processes in the brain, fail, therefore, to have a sufficient cause for our understanding. They stand outside of the causal nexus, and are, therefore, incomprehensible as much as a mobile perpetuum would be. It appears to a superficial observation as though certain mental processes and capabilities, as for instance memory, the flow and association of mental modifications, dispositions, habits, etc., might be understood by the knowledge of material processes within the brain; but the least reflection shows that this is a delusion. We would get informed only of certain internal conditions of mental phenomena, much like those external conditions which are required for sensorial impressions; but we never would draw any knowledge of the becoming of the mental phenomena by these conditions. What is the conceivable connection between certain motions of certain atoms in my brain and the original, indefinable, yet undeniable facts, that 'I feel pain or pleasure; that I taste something sweet, or smell the fragrance of a rose, or hear the sound of an organ, or see a red object,' and the consequent conclusion and immediate certainty, that 'I exist?' It is absolutely and forever incomprehensible, why it



should not be a matter of entire indifference how a given number of atoms of carbon, hydrogen, nitrogen, oxygen, etc., are situated and move, or how they have been situated and been moving, or how they shall be situated and move in the future. In no way is it conceivable, how consciousness could originate by their co-operation." (Emil Dubois-Reymond, *Ueber die Grenzen des Naturerkennens*. Leipzig, 1872.)

From all this it appears that the prevailing materialistic belief cannot boast of an unshaken foundation. Its mainstay, that the ganglionic cells of the gray matter are the receptacles and laboratory for external stimuli, has been made very problematic by the latest microscopical investigations of Max Schultze; that the gray substance of the brain is the real source of mental action, has been conclusively disproved by the physiological experiments of Flourens; that this theory does not simplify, but complicates difficulties that exist in regard to the explanation of psychical developments, has been shown by Henle; and that it is inconceivable how material processes can ever produce conscious, psychical phenomena, even of the lowest order, has been demonstrated by Dubois-Reymond.

For these reasons we shall maintain, that the sensorial activity is dependent upon a psychic force, differing in its nature from the gray matter, its cells and its finest nerve-fibrils, as much as the external elements differ in their nature from the terminal ends of the sensory nerves. It is not without significance that Max Schultze finds the nerves dividing into innumerable fibrils at either end,—at that where they have so long been supposed to originate, and at that where they terminate towards the external world. Strictly speaking, then, there is neither an origin nor a termination of the nerves; they lie as an indispensable apparatus, as a medium between the realms of psychic and corporeal forces, communicating with each by innumerable attachments and at innumerable points. In consequence of this communion by means of the nervous system, the corporeal forces or external stimuli come within reach of the psychic forces, and are assimilated by them, that is, are converted into their *kind*. This at once explains the sensorial function of the mind, and suggests at the same time the idea that there must be some kind of affiliation between psychic and

corporeal forces, without which assimilation would be impossible. Wherein it consists we do not know, but to deny that it may, even must exist, would be pretending an exactness of knowledge that, as far as the discussion has gone, we do not possess.

On the other hand, the psychic forces must not be conceived as undefined, shadowy, nondescript; as ideal existences which float about somewhere and yet nowhere, and never can be laid hold of. They are indeed well-defined, concrete faculties, which every soul brings into this world, and in their way as distinct and specific as the organs of which the body is composed. They do not develop themselves as products of bodily organization, but they are given entities; they are born with the body, and they are invariably the same in all human beings. And as the body consists of its various organs, tissues, vessels, etc., so is this system of psychic forces, which we may well call *primary or sensory faculties of the mind*, the sum and substance of the soul, as far as we can judge it from its manifestations by subjective as well as objective observations.

#### § 81. THE RAPIDITY OF SENSORIAL ACTION.

Notwithstanding the great similarity between some of the phenomena produced by the application of electricity and those attending the physiological action of nerves, the idea that the nerve-cells are the generators of an electric current has long been abandoned. The experiments of Prevost, Dumas, Matteuci, Longet and others, failed to detect the slightest evidence of an electric current with the most delicate galvanometer that could be constructed, so that what physiologists call nerve-force, must be admitted to be a force *sui generis*. But a method of experimenting widely different has corroborated this negative result. Helmholtz and others instituted numerous experiments to show the velocity with which sensations are perceived, or will-efforts executed, and even to calculate the time which elapses between a sensation and its consequent will-effort. The result of these investigations, carried on by very ingenious methods and instruments, is about this, that this velocity varies in different individuals, and under varying external conditions; that it lies between 24 and 94 metres in a second; that in most cases, however, it amounts to about 30 metres in a second, while electricity, according to Wheatstone,

travels 464 millions of metres, light 313 millions of metres, and sound 332 metres (according to Wertheim) in a second. (Preyer, *Ueber Empfindungen, Sammlung wissenschaftlicher Vortraege*, edited by Virchow and Holtzendorff, p. 16. Compare also Austin's *Nervous System*, p. 98 et seq.) This proves by another way the non-identity of nerve-force with electricity, and also the correctness of Henle's view (§ 80), that the conduction of the adequate stimuli through the sensory nerves cannot be a propagation of the vibrations of light and sound, etc., itself; that on the contrary the primary faculties have a rapidity exclusively their own, with which they seize and assimilate external stimuli, and produce all further mental developments dependent on them. These various experiments proceed a step further, and even show that this velocity differs in the different senses. It appears that a tactual stimulus to the forehead is more quickly perceived than a luminous stimulus by the eye, and this in turn more quickly than a sound. (v. Wittich, *Sammlung wissenschaftlicher Vortraege*, edited by Virchow and v. Holtzendorff, p. 28.) Professor Donders, on the contrary, shows that the time occupied in the transmission of a sensation through the eye to the brain, the formation of a judgment, and the transmission of a volition from the brain to the hand is .15 of a second; but when the ear is the receiving organ, the time required is only .09 of a second. (*Boston Journal of Chemistry*, Jan. 1874, p. 84.) However this may be, there always will be found differences in the rapidity of sensorial action in different individuals, and we have considered this subject already in § 14, where upon a purely psychological basis we arrived at nearly the same results.

#### § 82. THE ACUTENESS OR SENSITIVENESS OF THE PRIMARY FACULTIES.

In this respect also there exist differences in different persons. But the experiments made to elucidate the fact, how minute a stimulus will still perceptibly affect the sensory nerves, do not cover the whole ground. What has been ascertained is this: If a certain weight is being laid upon the hand, an additional weight is not perceived unless it amounts to at least the one-thirtieth

part of the original weight. For instance, if the original object weighs twenty-nine ounces, it requires the addition of a full *ounce* before any difference is noticed by the hand of the blindfolded experimenter; if the original weight is twenty-nine grains, one *grain* more will be perceived as an addition. This led to the discovery of the law (by E. H. Weber), that no matter what the original weight might be, an increment to be perceived is in an invariable proportion,—about the thirtieth part of the original weight. This, however, throws no light upon the ulterior point, how small a weight can be perceived.

In regard to *temperature*, it has been ascertained that, in order to be perceptible, a variation, even under the most favorable conditions, must measure from one-sixth to one-tenth of a degree R. A difference of temperature less than one-tenth of a degree is not perceptible.

A difference in the degree of *light* is perceived, if it varies by a hundredth part of its original intensity. Eyes of unusual sensibility perceive a change of the  $\frac{1}{133}$ d, and even the  $\frac{1}{167}$ th part in the intensity of the original stimulus. In short, the sensitiveness varies in different persons. And the same is true of *hearing*. A fine ear distinguishes two notes which in regard to their vibrations lie as near as 1200 and 1201,—a fineness of difference entirely imperceptible to a duller ear. (Compare W. Preyer, *Sammlung wissenschaftlicher Vortraege*, edited by Virchow and v. Holtzendorff, p. 28, et seq.) These attempts to reduce to numbers the degrees of acuteness possessed by the sensorial faculties, though imperfect, approximate the truth near enough to be received by us. They confirm what psychological observations have long before shown to be a positive fact, that the quality of acuteness differs in degree not only in different persons, but also in the different primary faculties of the same person. (§ 5.)

### § 83. THE RETENTIVE POWER OF THE SENSORIAL FACULTIES.

The following passages we find in Henry Maudsley's *Physiology and Pathology of the Mind*, pages 15–16: “Everything which has existed with any completeness in consciousness is preserved, after its disappearance therefrom, in the mind or brain, and may reappear in consciousness at some future time. That which per-

sists or is retained, has been differently described as a residuum, or relic, or trace, or vestige; or, again, as potential, or latent, or dormant idea; and it is on the existence of such residua that memory depends." "Consciousness is not able to give any account of the manner in which these various residua are perpetuated, and how they exist latent in the mind; but a fever, a poison in the blood, or a dream, may at any moment recall ideas, feelings, and activities which seemed forever vanished. The lunatic sometimes reverts, in his ravings, to scenes and events, of which, when in his sound senses, he has no memory; the fever-stricken patient may pour out passages in a language which he understands not, but which he has accidentally heard; a dream of being at school again brings back with painful vividness the school feelings; and before him who is drowning every event of his life seems to flash in one moment of strange and vivid consciousness." Page 17. "So far from the mind being always active, it is the fact that at each moment the greater part of the mind is not only unconscious but inactive. Mental power exists in *statical equilibrium* as well as in *manifested energy*; and the utmost tension of a particular mental activity may not avail to call forth from their secret repository the dormant energies of latent residua even when most urgently needed; no man can call to mind at any moment the thousandth part of his knowledge. How utterly helpless is consciousness to give any account of the statical condition of mind! But as statical mind is in reality the statical condition of the organic element which ministers to its manifestations, it is plain that *if we ever are to know anything of the inactive mind, it is to the progress of physiology that we must look for information.*"

In these passages we do not find anything new as regards the retentive power of the sensorial faculties; they confirm what psychological observations have long since disclosed, and from a standpoint which assumes that any information of statical mind (vestiges) can be expected only from the further development of physiology.

Without going into the discussion, how far nervous structure participates in the development and execution of mental processes (that it is a necessary link between the external stimuli and the primary faculties of the mind has been admitted before, and

is proven by the fact, that conscious developments do not take place until nervous structure makes its appearance. § 71), it nevertheless will be well to refer again to the utter impossibility of even explaining the transmutation of material processes into psychical phenomena (§ 80); how, therefore, physiology will ever become capable of unravelling inactive mind is difficult to comprehend. It is asserted, "that every phenomenon of mind is the *result*, as manifested energy, of some change, molecular, chemical, or vital, in the nervous elements of the brain. Chemical analysis of the so-called extractives of nerve testifies to definite change or a 'waste' through functional activity; for there are found, as products of retrograde metamorphosis, Lactic acid, Kreatin, Uric acid, probably also Hypoxanthin, and, respecting the fatty acids, formic and acetic acids. These products are very like those which are found in muscle after its functional activity; in the performance of an idea as in the performance of a movement, there is a retrograde metamorphosis of organic element; the display of energy is at the cost of the highly organized matter, which undergoes degeneration, or passes from a higher to a lower grade of being; and the retrograde products are, as far as it is at present known, very nearly the same. While the contents of nerves, again, are neutral during rest in the living state, they become acid after death, and after great activity during life; the same is the case also with regard to muscle. Furthermore, the products of metamorphosis of nerve-element, after prolonged mental exercise, are recognized in an increase of *phosphates* in the urine; while it is only by supposing an idea to be accompanied by a correlative change in the nerve-cells that we can explain the exhaustion following excessive mental work, and the breaking down of the brain in extreme cases. These things being so, what is it which in a physiological sense we designate the *mind*? Not the material products of cerebral activity, but the *marvellous energy* which cannot be grasped and handled." (Maudsley, 1, p. 39.)

This is an infinitely more advanced conception of mind than the coarse view of Cabanis and Vogt, according to whom the brain secretes thought as the liver secretes bile. In fact, this passage has been written in refutation of this view. And, while it endeavors to come nearer to a just appreciation of mind, as we

view it, it still is only an hypothesis which scarcely will stand before a scrutinizing examination into all the physiological and psychological facts. In the first place it takes for granted that the nerve-cells are the receptacles and laboratory of sensorial activities. This is by no means physiologically proved, and by the latest researches of Max Schultze made even quite problematic (§ 80). Secondly, it asserts that every phenomenon of the mind is the *result* of some change in the nervous elements of the brain. With the same right we may assert that the correlative changes in the material substratum are the result of mental activity. For we see will-power quite often hold in abeyance not only the special workings of the mind, but also the entire bodily frame. This, however, will always remain a bone of contention, because "*correlative changes in the material substratum*" depend, as the term implies, upon *reciprocity*, and to determine in each single case which is cause and which effect may not always be possible. We shall have, however, to recur to this subject when treating of the relation between mind and body.

So must also the once cherished conjecture that mental activity is based upon the consumption of phosphorus in the brain, "because phosphates appear in the urine in consequence of a retrograde metamorphosis of nerve-substance," be consigned to the "*dreams of science*," as Virchow says (*Cellular Pathology*, 1871, p. 278). Maudsley at last recognizes the mind to be "not the material products of cerebral activity, but the *marvellous energy* which cannot be grasped and handled." A marvellous energy of what? Of the brain. As the working of a steam engine represents its "manifested energy," so "thought represents the energy of nerve-cell." At first sight this reasoning appears very plausible indeed, to some minds even convincing. Its only fault is, that it confounds condition with cause. The working, that is, the functional manifestations of an engine is not at all *its* manifest energy; it is the energy of a something altogether different from the engine, namely, the energy of *steam*, which, however, must find an appropriate mechanism to manifest itself just in this way. The engine is, therefore, not the *cause*, but only the *condition* of its so-called "manifested energy or function." So is the brain or the problematic virtue of the nerve-cells only the *condition* of

*mental* phenomena, or its marvellous energy, by and through which a something altogether different from the brain, namely, the *soul*, manifests itself as the *cause* of all this marvellous energy. We have here an example of the "powerful" and now fashionable "tendency in the human mind to make the reality conformable to the idea, a tendency which has been at the 'bottom' of so many views advanced in physiological psychology to convert marvellous energies into objective entities and allow them to tyrannize over the understanding." And here applies fully what Goethe says:

"Daran erkenn' ich den gelehrten Herrn !  
 Was ihr nicht tasted steht euch meilenfern ;  
 Was ihr nicht fasst das fehlt euch ganz und gar ;  
 Was ihr nicht rechnet, glaubt ihr sei nicht wahr ;  
 Was ihr nicht wägt, hat für euch kein Gewicht ;  
 Was ihr nicht münzt, das, meint ihr, gelte nicht."  
*Faust, Zweiter Theil, erster Act.*

"By that I know the learned lord you are !  
 What you don't touch, is lying leagues afar ;  
 What you don't grasp, is wholly lost to you ;  
 What you don't reckon, think you, can't be true ;  
 What you don't weigh, it has no weight, alas !  
 What you don't coin, you're sure it will not pass."  
*Bayard Taylor's translation of Goethe's Faust, Part II, p. 18.*

But this is not all. The "marvellous energy" does not advance us one step in discriminating the different sensory faculties in regard to their degree of retentive power, a point which is so obvious to the observation of the psychologist (§§ 6, 7). Where has physiology ever found a difference in the nerves or nerve-cells to warrant the acceptance of an equal difference in their energy? In the course of centuries, perhaps, it may. In the meantime, however, we must rest satisfied with what psychology proves, that the primary faculties graduate in their retentive power from the highest to the lowest senses (§ 8), and that in this gradation is founded not only the clearer knowledge we gain from the outer world by means of the higher senses, but also the moral norm which places man at the summit of this mundane creation (§ 58).



## § 84. CONSCIOUS DEVELOPMENT.

In paragraphs 1 and 2 we have ascribed to the nervous structure a potentiality for conscious development; but this proposition is denied by no one. The question is, is nervous structure the *cause* or the *condition* of such development? According to the conclusions we have arrived at in the last paragraph, we contend that it is the *conditio sine qua non*, but not the *cause*. The humblest animal has *its* soul as well as man has *his*. But the difference consists in the varied degrees of retentive power or energy with which the sensorial faculties of the various classes of living beings are capable of holding fast and appropriating what they receive of external stimuli.

In glancing over the variously shaded manifestations of intelligence as displayed by the different classes of animals, we find in animals lower than the class of articulates only very faint signs of conscious development. A much greater amount of intelligence is displayed by several tribes of the articulate class. I mention merely the well-known industry and skill of the bees; the orderly conduct of the ants in their household affairs; the cunning with which the spider selects fit places for its hunting ground, and the clever adaptation of its web to these localities. Compared with them it is doubtful whether the lowest vertebrate class, the fishes, can be attributed with a greater or even an equal amount of intelligence; for that they can be made to assemble for their meals by the ringing of a bell is perhaps no sign of greater intelligence than the bee exhibits in learning to know its keeper, or than that ant showed which hastily turned back on her accustomed way to the sugar-bowl when she found several of her sisters killed, and meeting others seemed from the sequel to converse with them, for presently the whole crowd hastily disappeared to return no more. Not much greater than that of the fishes appears the intelligence of the reptiles. The birds, however, show a decided progress in intelligence, and still more plainly does it manifest itself in some tribes of the mammalia. Thus conscious development varies greatly in the different classes of the animal kingdom, and not only is this apparent between whole classes of animals, but also between single individuals of

the same tribe. Some dogs, for example, are much more docile than others. "This is easily explained," says the physiologist, "by the greater or less amount and perfection of the cerebral structure with which these different animals are severally endowed." And it is but reasonable to expect that wherever we find a greater amount of intelligence we should also find more perfect conditions for the display of this intelligence. But is the varied structure of cerebral development really an adequate explanation of the varied intelligence which we find in the different classes of animals and in different individuals of the same species? It seems not; for there is not any trace in all the articulates of anything that can be fairly considered homologous either with the cerebrum or with the cerebellum of the vertebrates; and yet who can deny conscious development to spiders, ants, bees, and other insects? Even the amphioxus and the cyclostome fishes in general exist without any trace of cerebrum or cerebellum (§ 71), and yet conscious development, if ever so faint, they surely possess. We have here specimens of animal organization which, in their natural healthy state, without the mutilating interference of physiologists, prove that conscious development does in reality exist (1), not only without the presence of anything like a brain, but (2), with even the further want of a proper medulla spinalis. With what right, then, can the *brain* be considered as the only condition, much less as the sole *cause* of conscious development? Here, as elsewhere preconceived, ideas have been allowed "to tyrannize over the understanding." Deeper than the brain, deeper than the medulla spinalis, deeper than the ganglionic cells in either the brain, the medulla spinalis, or any other of the nerve-ganglions, lie the inborn psychic faculties of all and every living being, and in accordance with their native energy or capability of retaining the impressions of external stimuli do they develop consciousness in a higher or lower degree. And, furthermore, as this energy rises in the ascending scale of animal creation, so do also the conditions which are necessary for a corresponding display of these faculties become more and more elaborate, complex, and perfect, and in this mediatorial quality of nervous structure consists its potentiality for conscious development, its office as a medium between psychic forces and external stimuli. The faint

energy of the psychic forces in retaining and assimilating external stimuli, as manifested by the lowest classes of animal life, requires but a simple structure of nerve-element; as, however, the psychic forces in the ascending scale of animal life attain to greater and greater retentive power, and in consequence to greater complexity of conscious development, so must the means for the display of such development correspondingly increase in complexity. It is, therefore, not because the higher animals have a medulla spinalis and a brain that they are capable of a more perfect development of consciousness, but because they are endowed with more energetic psychic forces, which necessitate a more complex means for their activity. This reversion of received physiological ideas is the necessary consequence of our investigations, which have proved that brain is not the cause but only the condition of conscious development. We shall, however, further strengthen this view by subsequent investigations.

#### § 85. VARIOUS DEGREES OF CLEARNESS IN CONSCIOUS DEVELOPMENT.

A mere reference to what has been detailed in § 8, will suffice to prove that mental modifications in man differ greatly in clearness, according as they are products of the higher or of the lower senses. Everybody knows that what he has seen, heard, and touched, is held more retentively than that which he has smelled, tasted, or felt (embracing in the latter term the so-called general feeling and sensations originating in the sympathetic system). There is a marked indisputable gradation in the conscious development of these several sensorial faculties as to the clearness of their products from the sense of sight down to the vital senses. All science, and all clear minute differential knowledge owe their origin and growth to the higher senses; not even approximately do we attain this clearness and discrimination by means of the lower senses. Why is this? Does physiology furnish any explanation? It might, indeed, refer to the greater perfection of the organs which minister to the higher senses. But is this not the same preconceived idea which confounds condition and cause? Is it not again attributing to the nerve-cell an office which is by no

means proved and more than problematic? And the question recurs, where then is the cause of these differences? The answer, and as we believe the only answer, must be gathered from the foregoing researches. He who has followed them intelligently must see that the differences of conscious development result from the different degrees of retentive power with which the sensory faculties of the mind are severally endowed. By this difference of the sensory faculties, in respect of retentive energy, their consequent products or vestiges are stamped with a corresponding difference. If the faculties are of such a nature as to be capable of maintaining the union into which they have entered with external elements, the product or vestige (which, as we have seen in § 6, is the objective development of these primary faculties) will be distinct and lasting; if, however, the nature of the primary faculties is not capable of such firm union, the product or vestige produced by the influence of external stimuli will be correspondingly weak and evanescent. Now, as according to the law of attraction of like to like (§ 9), the single vestiges by repetition of similar impressions, gradually grow to be aggregates, it is plain, that the aggregates must share the character of their components. An aggregate of definite and lasting vestiges will, therefore, be a definite and lasting, a perfect and clear mental modification, while an aggregate of ever so many evanescent single vestiges will never attain to any clearness as a conscious development. And this agrees entirely with the facts before us. Man attains to clear ideas of the world around him only by his higher senses, and these ideas again are sublimated by the same law of attraction of like to like to still higher ideas (§§ 15, 16), and these are combined into new forms of conscious development as in the acts of judging and reasoning (§§ 18, 20), all of which is possible and explicable only on the ground of the greater energy of these faculties to assimilate lastingly the corresponding impressions of the outer world. In the lower senses this perfection of conscious development lessens more and more, until in the vital senses it becomes quite faint, shadowy, indefinite. So in the animal kingdom. The higher classes undoubtedly attain a conscious development analogous to that of man; and yet, however striking in single instances it may

appear, it never reaches the depth and fulness of man's conscious growth. We often attribute to animals an intelligence not their due in amount or in kind ; we see it where we least expect it, and enthusiastically confound their mental glintings with our broader mental light.

But with all this we do not intend to deny a capability in animals for developing a consciousness analogous to that of man. In them the same laws prevail as in man. As man has no innate intellect, taking the word in the sense of the old physiologists, as a power to form ideas, judgments, and syllogisms (§§ 17, 20, 21), so in the animal nothing of the kind exists. But as man reaches his highest possibilities by the innate energy of his higher senses, so does the animal attain to an intelligence which corresponds to the energy of *its* sensory faculties. And it appears that this retentive power of the sensory faculties in animals is not distributed altogether as it is in man, from sight down to the lowest senses. In dogs, for instance, and probably in some other animals, the most energetic sense seems to be the sense of smell, while the spider and bee, and probably many other insects, rely most upon their sense of touch. However this may be, this much is certain, that none of the animals exhibit a conscious development, which broadly considered, can be compared with that of a normal human being. The difference lies in the inborn energy of the sensory faculties, and although this difference is only one of degree, the cumulative effects of its products make it a difference of kind. To say that a dog or any other clever animal, if it only could speak, would show itself as intelligent as many a man, is a confused way of reasoning. If the dog could speak, I mean humanly, it would cease to be a dog, but just because it never attains to anything higher than a dog's language, its mental life is specifically different from that of a human being. It is not language that makes man a man, but it is man in virtue of his higher mental nature that makes language ; and so does the language of the animal correspond precisely to the standard of its mental development.

These higher developments of consciousness, with all their countless combinations, associations, and activities, are believed to be "by all those who have most studied the physiology of the

brain, and are best entitled to speak on the matter, the highest display of organic development in the nerve-cells of the gray cortical layers of the hemispheres." (Maudsley, p. 106.) I shall not repeat here the reasons why this belief may turn out entirely fallacious (compare § 80, and others), notwithstanding it is said to be the belief of all those who have most studied physiology. For even admitting the correctness of this view, "the organic processes of mental development which take place in the minute cells of the cortical layers, are so exquisitely delicate, that they are certainly, so far as our present means of investigations reach, quite impenetrable to the senses." (Maudsley, 107.) How then can physiology be considered a sufficient guide, much less the only guide to unravel mental life? Against such one-sided views, Schopenhauer speaks the following words, which, though cutting, should nevertheless be taken to heart: "There are persons who thrust themselves into the foreground, as reformers of the world, who have learned nothing on earth but their chemistry, or physics, or mineralogy, or zoology, or physiology; and they eke this out by other fragments of knowledge, namely, what has stuck to them from their schoolboy teaching of the catechism, and if then, these two constituents of their learning do not appear to fit exactly, they at once turn out to be scoffers at religion, and next, absurd and shallow materialists. That there has existed a Plato and Aristotle, a Locke and Kant, they have heard perhaps in school, but such people they did not deem worthy of closer examination, as they never used crucible, nor retort, nor even stuffed monkeys. . . . These persons we must bluntly call ignorami, who have got to learn a great deal before they can be even allowed to participate in the discussion."

"Da werfen sich Leute zu Welterleuchtern auf, die ihre Chemie, oder Physik, oder Mineralogie, oder Zoologie, oder Physiologie, sonst aber auf der Welt nichts gelernt haben, bringen an diese ihre einzige anderweitige Kenntniss, nämlich was ihnen von den Lehren des Katechismus noch aus den Schuljahren anklebt, und wenn ihnen nun diese beiden Stücke nicht recht zu einander passen, werden sie sofort Religionspötter und demnächst abgeschmackte, seichte Materialisten. Dass es einen Plato und Aristoteles,

einen Locke und Kant, gegeben habe, haben sie vielleicht einmal auf der Schule gehört, jedoch diese Lente, da sie weder Tiegel noch Retorte handhabten, noch Affen ausstopften, keiner nähern Bekanntschaft werth gehalten. . . . Ihnen gehört die unumwundene Belehrung, dass sie Ignoranten sind, die noch vieles zu lernen haben, ehe sie mitreden können."

And how is this physiological view capable of explaining the countless associations of ideas?

"The anatomical connection of a nerve-cell in the cerebral ganglia does, of a necessity, limit the direction and extent of its action upon other cells; for it may be deemed tolerably certain that as the conduction in nerve-fibres demonstrably does not pass from one to another, except by continuity of tissue, so the activity of one cell cannot be communicated to another except along an anastomosing process." (Maudsley, p. 121.) Is this explanation adequate to our every-day's life experience? Do we not every minute form new combinations of old and new ideas? Have these combinations, so shifting and complex, that no one can imagine the strangeness of their next grouping, been *performed* by certain anastomosing processes between certain nerve-cells? Does such a materialistic and inadequate explanation not prove again the strong tendency of the human mind to make the reality conformable to preconceived ideas? As physiological anatomy is not capable of explaining even the lowest forms of conscious development, we need not wonder that its attempts to explain the higher forms must necessarily prove abortive.

#### § 86. THE AFFERENT NERVES.

These receive their name from the physiological observation that they convey stimuli from the different centres to the periphery. They are divided into such as terminate in striated muscles, furnishing a medium for the action of the voluntary muscles, into such as terminate in non-striated muscles, furnishing a medium for the action of the involuntary muscular tissue, and into such as terminate in the different glands, furnishing a medium for glandular action.

[TO BE CONTINUED.]

**ARTICLE XVI.—Mathematical Certainty.**

By C. Ho.

OUR great master, in his treatise entitled "The Medical Observer,"\* after stating what is required to educate us for the acquirement of the faculty of observing, said :

"A knowledge of mathematics gives us the necessary accuracy in drawing conclusions."—*Mat. Med.*, v. 4, 1813; 2d edition, 1825.

Hahnemann knew what mathematics were. In the first edition of his *Organon*, in 1810, he made the following note to § 122 :

"Where, instead of *one*, as thus far, thousands of careful and reliable observers shall have taken part in investigating these *first elements of a rational knowledge of drugs*, what shall not be accomplished in the entire infinite domain of disease! Then therapeutics will no longer be subject to the opprobrium of *groundless method of conjecture* (*ars conjecturalis*)."

In the second edition, 1823, he altered this note as follows :

"Until six years ago I was the only one who made the proving of pure drugs his most important occupation. Since that time I have been assisted by several young men who made provings on themselves, and whose observations were given to me for examination. What shall we not accomplish in the way of curing the infinite varieties of disease when thousands of careful and reliable observers shall have contributed, by careful provings on themselves, to the enrichment of our *Materia Medica*! Then therapeutics will approach in certainty the mathematical sciences."

It would be a loss of time and waste of paper to collect the sneers of our old-school opponents against these words of Hahnemann.

An historical encyclopedia would be the proper place to give the many events in practical life which prove how right Hahnemann was.

Here the intention is only to show, by some few signs, that we are coming nearer and nearer to that which Hahnemann predicted. Mathematicians have declared misprints of minor importance in their works, even school-books, as they are readily

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\* See *Am. Journ. of Mat. Med.*, Sept., 1875.



detected and can with certainty be corrected. Of course, tables like logarithms, etc., have to be correct, lest they lead to mistakes not easily discovered.

We also have arrived at a degree of certainty in some points which makes it impossible for misprints to mislead.

On most of the "memory cards" the names of remedies could not be changed without it being discovered even by beginners. It once happened that, by using the wrong plate, a set of characteristics received the wrong names; of course the error was discovered at first sight.

In the *Transactions* of the State Society of New York, vol. i, 1874, p. 434, in a treatise by G. S. Norton, on pustular inflammation of cornea and conjunctiva, in every respect the best in our whole literature, the printer omitted the name of the first medicine from the head of the paragraph, and the proof-reader overlooked the error.\* But a student of *Materia Medica* would, reading the ten lines, know that he had before him symptoms cured by *Apis*. It would not be mere guesswork or supposition, no! He would be, we may say, mathematically certain.

In our classical works on Intermittents, by Bœnninghausen, a daily help also in other than intermittent cases, where we have to decide according to symptoms of cold, heat, and sweat, and their modalities and concomitants, we find *Fluoric acid* mentioned in the list for "chill lessened after sleep," on page 101. This is in contradiction to the symptom in the first part, page 24, "*Fluor. ac.*, chill none at all." This was right, for among more than twelve provers, mostly physicians and experienced provers, not one had even a crawl, although large doses were taken. There was evidently a mistake. None of the other drugs of Bœnninghausen's list between the foregoing *Cuprum* and the following *Nux vom.* had a corresponding symptom except *Ferrum*, which has coldness all over in the evening and sometimes all night long, thus the coldness was *better in the morning*. No doubt Bœnninghausen wrote *Ferr. ac.*, or meant it, and it was changed into *Fluor. ac.*

This was not mere guessing, but a certainty, and therefore printed correctly in Korndörfer's translation.

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\* This same error found its way into Raue's Record, 1875, p. 43. Read *Apis* instead of *Arg. nitr.*

In repertories of many remedies correctness is of the same importance as in logarithms. Very few of our repertorial works are entirely free from misprints. The aforementioned translation, however, underwent such careful proof-reading that as yet not one essential error has been discovered. We should feel it our duty to publish such errors; the authors of provings particularly ought to do as did Dr. Douglas, who, to prevent the correction being overlooked, gave it in a very apt and humorous way in one of the Western journals.

Neither Hale, in his work, nor even Allen, in his *Encyclopedia*, took notice of these corrections. As the latter has earnestly requested that corrections should be made, let every one consider it a duty to communicate the errors he may find, and every one who has the book take the time to correct even the slightest.

The progress we have already made in our *Materia Medica*, towards a natural science, is much greater than ever has been the case with any other natural science in the same time. They all have ages behind them; we have our centennial before us in 1890. "Let every man do his duty," said Nelson, and gained the battle. If our care and activity continue to increase as they have thus far, we will then have what Hahnemann was looking forward to, *in the majority of cases a mathematical certainty.*

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## ARTICLE XVII.—Lupus and Tuberculosis.

BY RICHARD VOLKMANN.

WE understand by lupus a diseased condition with distinct clinical and anatomical characteristics. During the course of my lectures patients are sent to me year after year with the diagnosis of lupus, but who suffer from carcinoma, as in many a case the consequent anatomical examination shows; this is especially the case with these flat cutaneous cancers, either spontaneously cicatrizing or only partially, under the use of caustics, which we mostly find in old people and run a chronic course, but which exceptionally are also observed at the age of 30. After all, we

find a vast difference in the conditions under which this form of cancer arises, and the clinical picture of such a cancer, as also its course, is different. We base our diagnosis on the differences in the consistency and extension of the infiltration, in the color, in the form of the edges, and in the appearance of isolated nodules. A vast clinical experience is needed in order to differentiate well between carcinoma and lupus.

Only a few days ago I again operated on such a case. The whole left side of the face, nose, and eyelids is covered by one scar; the nose disfigured from the many cauterizations and even from a plastic operation; here and there, at the edge of the cicatrix, some perfectly flat nodules; at the inner corner of the eye a deeply penetrating ulcerous defect. The patient, 55 years old, suffered from this process for the last seventeen years; it has always been diagnosed as lupus and was sent to the clinic as such a one. And still to recognize it as a cancerous affection of the skin it needed only to introduce the finger in that deep ulcer at the inner corner of the eye, and to feel the hard, knobby, peculiarly granular masses, adherent and grown to the bone, which form the base of the ulcer and extend over to the conjunctiva bulbi. We perceive, then, also that the edges of the defect show a minimal inclination of bending outwards, and that the nodules at the edge of the cicatrix are larger, paler, and harder, showing also different forms, than those of lupus. Lupus has nothing whatever in common with cancer. If we would examine every case histologically after removal of the affected parts with the knife or scoop, errors in diagnosis would be less frequent. If some affirm that lupus sometimes shows the structure of cancer, I put such an opinion in the same category as if somebody would say that cancer of the breast is sometimes only an indurative mastitis with formation of knobby masses and cords, produced by retained secretion in dilated milk-ducts. I have made this very mistake twice, and amputated the breast in consequence of this false diagnosis, and, sure enough, this was a radical cure, and a relapse never took place.

The only apparent connection between lupus and cutaneous cancer is found in the development of the latter secondarily on a soil irritated continually for years by a chronic lupus. Langen-

beck witnessed this twice, and three such cases I mentioned in my clinical lecture; the fourth, finally leading to an extensive osseous resection, is published in my late *Contributions to Surgery*. In neither case do we find a transition of the one form of neoplasma into the other. The cancer is here an accidental addition, as we also witness it in old scars from burns, which open forever again, in long-continuing bone fistulæ, and even once in a maltreated fontanel, and rises from the cicatrized epithelium, or from cutaneous glands inclosed in the cicatrix, or from scattered remnants of half-destroyed cutaneous glands. Chronic or constantly returning irritations of the epidermoidal or epithelial coverings are well known as the most usual causes of carcinoma.

In looking at the anatomical character of lupus we feel justified to put lupus into that class of tumors emanating from processes of emigration in the cutis and subcutaneous connective tissue, thus in the same group with syphilis, lepra, and tuberculosis. This also betokens its antithesis to cancer, and it remains only to examine which position lupus holds to these forms of neoplasmata, and whether it stands in closer relations to the one or to another of them. This is the point which is just now most studiously microscopically examined. I believe that most intimate relations exist between tuberculosis and lupus, and that the latter fairly represents a peculiar form of tuberculosis of the cutis and of the mucous membranes, or at least a form closely related to it, and that it may be considered in some cases as a transition form. Before passing to the anatomical side of the question it may be necessary to consider the clinical relation of both affections one to another, and this may suffice for to-day. I believe that closer observations at the sick-bed, more extended statistical researches, etc., may aid us in the study of their anatomical and histological character. In comparing, then, the tissue of lupus with that of the tubercle, whether more value ought to be given to the dissonances or to the consonances in the tissue-structure of either neoplasma, clinical experience will aid us greatly in the formation of our judgment.

Even in my clinical lecture, written in the spring of 1870, I was very reticent in giving an opinion about the connection between scrofulosis and lupus, and opposed Virchow, who believed

that in lupus morbid affections of the lymphatic glands were regularly absent in a certain form. I admitted of having seen, many a time, chronic suppuration of the lymphatic glands in lupous patients, and of having extirpated large cheesy glandular nodes. I also mentioned the simultaneous appearance of chronic conjunctivitis and of multiple cutaneous ulcers with the character of scrofulous ulcerations, also the case of a lupus with simultaneous cheesy necrotizing ostitis of the ulna. On the other side I admitted of having lost only a small number of lupous patients from tuberculosis pulmonum. Five years have since then elapsed, many more cases have been observed, and I have found that where lupus coincides with the symptoms of severe or light scrofulosis, tuberculous glands have to be excised, most frequently in the inframaxillary region, and in one case of lupus, at the femur in the inguinal region. I also learned that in the families of lupous patients pulmonary tuberculosis is rather frequent, although the latter are only rarely attacked by it. Finally, I have observed since then a whole series of severe, partly multiple, affections of the joints and bones in such patients, and I acknowledge, therefore, now a close connection between scrofulosis and lupus.

I put very little stress on it, that many a patient, suffering from lupus, looks hale and hearty and shows no local disturbances hinting to scrofulosis or tuberculosis. How often do we meet severe chronic affections of the joints and bones, which not only demonstrate the clinical peculiarities of scrofulous dyscrasia, but where we also find, after amputations or resections, the most manifest tuberculous eruptions in the synovialis, or even in the medullary tissue of the bones, as the sole disturbance in persons otherwise perfectly healthy. It cannot be put down as a rule, or even as the more frequent occurrence, that a child with chronic fungoid suppuration of the hip or knee-joint also suffers from multiple scrofulous morbid foci, or that it has suffered from such disturbances, nor that it after awhile succumbs to cerebral or pulmonary tuberculosis. It suffices that this coincidence frequently exists. In fact, nobody refuses to consider in children such chronic affections of the joints and bones as manifestations of scrofulosis. Recent pathologico-anatomical researches suffi-

ciently show that such an opinion is fully justified, inasmuch as especially in the joints tuberculosis is extremely frequent.

There is not the least doubt that in many patients, although lupus existed for many a year, the lymphatic glands remain free from cheesy inflammation, and it may be possible that lupous patients offer less frequently decisive symptoms of scrofulosis, and that they are less disposed to miliary eruptions in internal organs than persons with chronic, articular, or osseous affections. We may just as well acknowledge that there is nothing certain yet about this point, and as yet we can only say that we consider lupus a locally remaining, very little infectious, modified and weakened form of scrofulosis.

Of more importance is the fact, that there are mixed and intermediate forms between lupus and manifest tuberculosis of the cutis and mucous membrane, and that the lupus of the skin may develop itself from the tuberculosis of the bones or lymphatic glands.

In relation to the first point, it seems very remarkable that such cases were not more frequently observed, as they are really not so very rare. For all and even for the most malignant forms of lupus the slight tendency to suppuration and the total absence of deep ulceration, and especially of ulceration rapidly extending in depth, is characteristic. The tissues are always slowly destroyed, changed into lupous tissue, which may suppurate in places, but shrinks in extenso, and thus produces defects, deformities, and distortions of the skin. Very voluminous hard scars, looking as if torn and in shreds, as we see them after the healing of scrofulous (tuberculous) ulcers, are only found in lupus where powerful caustics were applied. Deep suppuration and the formation of genuine abscesses are never seen, nor do we meet osseous necrosis on the margins of the orbita, on the hard palate, in the nose. In scrofulosis, where they are so frequent, their origin is favored by the formation of larger foci of suppuration, and by the greater extent of the retrogressive metamorphosis of the tissues.

But I have also met quite a number of patients where exquisite lupous foci were found side by side with characteristic scrofulous ulcers, and even forms uniting the peculiarities of both, thus:

sinuous or fistulous ulcers with solitary lupous nodules appearing at the edges, or even broad, clearly lupous infiltrations leading in parts to the formation of abscesses and to the accumulation of masses of cheesy pus. Such mixed forms are especially frequent on the soft and hard palate and perhaps also in the larynx; very rarely on the face; more frequently on the extremities.

Of still higher importance is the observation that deeply seated scrofulous (tuberculous) inflammations of the bones and lymphatic glands, when they break and draw the cutis into coaffection, cause on the skin lupous eruptions, which may extend from the place where the inflamed part opened or from the fistula over a great part of the adjacent cutis. Although this may be a rare occurrence, still I have observed it already in four cases: twice in discharging osseous tuberculosis of the phalanges (*spina ventosa*, *pseudarthrace*) lupus arose in the immediate neighborhood of the fistula, spreading over the back of the hand to the forearm, showing a hypertrophic character, and the formation of nodules was especially characteristic on the edges. A similar state could be seen in a boy with central tuberculous caries of the calcaneus, who already suffered from lupous eruptions on the trunk and extremities. Here it took the character of lupus *serpiginosus*, without any tendency to ulceration, and with a clear formation of nodules. My fourth observation was in a girl, where, to a scrofulous suppuration of the lymphatic glands in the *regio infra-maxillaris*, existing for several years, a non-ulcerating lupus was added, extending from below upwards over both cheeks. Esmarch also observed lupus secondarily develop itself from chronic suppuration of lymphatic glands.

To this clinical experience we may add certain consonances in the anatomical structure of the tubercle and of lupous tissue. I remarked already years ago in my lectures, that "the cells of lupus frequently form closely below the mucous layer, from which they are divided at the start by an edge of clear connective tissue, sharply defined, large, round or oval masses, reminding one of miliary tubercle, or at least of similar formations, as lately described by Koester, from fungous granulations of the *synoviales* in *tumor albus*. It may therefore be possible, that other conso-

nances may still be discovered between lupus and fungous articular inflammations."

C. Friedländer (*Virchow's Archiv*, vol. 60, p. 15) arrived at a later stage to the well-known result, that lupus, in its histological formation, may be strictly added to tuberculosis. He finds in the morbidly affected parts of the cutis, imbedded in the granulation-tissue, small round nodules, running together in some points to irregular masses, inasmuch as they consist of larger endothel-like cells, inclosing "typical giant cells." After explaining then, that "general contagiousity" must not be considered as a "conditio sine qua non for the diagnosis of tubercle," and reminding his reader that also in other places and in other organs, as *e. g.*, in the brain, solitary tubercles are often found in persons where similar morbid affections can nowhere else be observed, he puts down as characteristics of tubercle: 1, the nodulated form of the neoplasma; 2, the well-known histological composition, including the absence of bloodvessels; 3, the tendency to detrition; the short duration of life of its elements. The same characteristics he also finds in lupus.

After thus reviewing the consonances, we have also to study the dissonances between lupus and tubercle, for there are numerous tubercles of the cutis and mucous membrane, offering clinically a picture vastly differing from lupus. Many forms of scrofulous ulcers, in which at first the subcutaneous connective tissue appears more affected, but which after awhile draw the cutis itself into coaffection, offer the best example. Here the microscope shows miliary nodules, passing into extensive cheesy purulent dissolution, and whose absolute identity with the miliary tubercles of internal organs cannot be denied.

Eduard Lang (*Stricker's Med. Jahrb.*, 2d Haft, 1875), gives us in his valuable essay the dissonances between lupus and tubercle. He passes by the discussion on the identity of tuberculous and lupous nodules, as he only works out the anatomical character. I would commit the opposite fault, considering the question only in its clinical aspect; still I would like to draw attention to the following points:

Lupus appears mostly not in the form of solitary round, or ovoid, sharply defined granules, but rather in the form of a con-



nected, irregularly laced network, so that the microscope gives us rather an adenoid impression, or the picture of foliage or of a map. In other cases the lupus-tissue forms diffuse layers or more extensive tracts, which appear only broken by the penetrating bloodvessels, accompanied by a little granulation-tissue. Even sharply circumscribed microscopic lupus-granules are divided again by penetrating vascular loops in a number of partitions, and these again in a still greater number of smaller partitions, so that the parts without bloodvessels are far smaller than we find it in tubercle, where frequently the pretty large granule shows no trace of vascularization. In lupus we often find complexes of two or three giant cells with some few surrounding endothelial (epitheloid) cells, sometimes even without them, surrounded by fine vascular ramifications.

The giant cells are far more numerous in lupus than they are ever found in tubercle. We often find spaces consisting entirely of giant cells, yea where they even, analogous to thickly stratified epithelium, form large, uninterrupted, extensive strata. The tendency to retrogressive metamorphosis, corresponding to the more considerable vascularization, is therefore far less; but I may add, that there are exceptional cases, which also in relation to this point show the transition to exquisite tuberculosis, and where we find egregiously extensive cheesification. It appears that in such cases histological differences pass away entirely. According to our observations, we meet such cases most frequently in ulcerating cutaneous affections, which also clinically stand between lupus and scrofulous ulcers.

It is a pity that the Latin word *tuberculum* does not allow the adding of the Greek "oides." Chemists are less scrupulous in the formation of words. We ought to make a new word, *tuberculoid*. May the importance of these differences be great or small, so much is certain that lupus is a pathological neoplasma, showing an organization closely resembling tubercle. Koester's nodules in the joints, the tumors of the lymphatic glands appearing under the picture of simple hyperplasia, and which still histologically are only a conglomerate of miliary tubercles, finally, the lupus are formations, clinically and anatomically similar to tubercle, but their identity has not been proven.—*B. Klin. Wochenschrift*, 30, 1875.

Volkman emphasizes the clinical and anatomical *similarity*, not identity, of lupus and tubercle. Rindfleisch emphasizes the identity of tuberculosis and scrofulosis, especially the standing infiltrative character of the scrofulous inflammation, and Volkman also acknowledges an intimate connection between scrofulosis and lupus. He also leads our attention to the fact that lupus, as well as severe scrofulous, articular, and osseous affections, appears in persons otherwise apparently perfectly healthy, and we might perhaps say that persons affected with lupus offer less distinct symptoms of scrofulosis, and that they are less liable to miliary eruptions of internal organs than individuals with chronic affections of the joints and bones; hence *lupus might be considered as a locally remaining, less infectious, weakened, or somehow modified form of tuberculosis* (a tuberculoid), but that there are mixed and intermediate forms between lupus and manifest tuberculosis of the skin and mucous membranes, and that lupus develops itself sometimes from tuberculosis of the bones and of the lymphatic glands.

Anatomically, Volkman and Koester, describe the lupus-cells as sharply defined, large, round or oval masses, similar to the miliary tubercle, and Friedländer arrives at the conclusion that *histologically lupus must be added to tuberculosis*. He found imbedded in the granulation-tissue of the affected parts small globular nodules, running together in parts to irregular masses, consisting of large endothelial cells, which contain "typical giant cells." He considers characteristic of lupus and tubercle: 1. The nodular form of the neoplasma. 2. The histological composition, including the absence of bloodvessels. 3. The tendency to detrition; the short duration of life of its elements. Volkman then finally emphasizes the far greater prevalence of giant cells in lupus than in tuberculosis, the formation of lupus in diffuse, equally spread-out layers, split up into minute parts by the penetrating bloodvessels, and the lesser tendency to retrogressive metamorphosis.

After this short recapitulation we refer our readers to the article on tuberculosis pulmonum and scrofulosis by Professor Rindfleisch (*N. A. J. of H.*, xxii, p. 188), where we find that Rokitsansky considers scrofulosis an exudation of degenerated protein matter, that Virchow emphasizes the prevailing exuberance of

cells in the serofulous exudation, and Rindfleisch considers the infiltration to a tough, dense, gray, transparent mass the acme of the process.

Let us now impartially consider, whether carcinoma does not also belong to scrofulosis, and whether it is not the acme of that process which Hahnemann called psora at the time he investigated diseased conditions, and which he, were he alive now, would call scrofulosis. What is carcinoma? Rindfleisch (*Pathological Histology*, i, 180, § 148) considers it an ingrowth of the epithelium into the subepithelial stratum of connective tissue, whether of the skin or of the mucous membrane, or into the interstitial connective tissue of the glands, page 184; he considers adenoma a tumor extraordinarily rich in cells, too scantily provided with vascular connective tissue, and which therefore evolves within itself the causes of its own ultimate destruction (lupus is an adenoma of the sebaceous glands), and *glandular cancer the natural termination of the histogenetic series, etc.*, the growth of the glandular epithelia waxing more luxuriant and more general, the regular elaboration of the gland tubuli being more and more neglected for the sake of a proportionately more rapid penetration of the interstitial and surrounding connective tissue.

Nussbaum (*N. A. J. of H.*, vol. xxiv, p. 86) gives us the same description of cancer, which he considers an epithelial proliferation, dislodging and splitting up the connective tissue, degenerating by pressure all adjacent parts, and passing into an ulcerative process. The vascular stroma is the soil, the epithelium the plant. He then considers cancer a local disease, arising on a place of minor resistance, and especially a disease of declining age, denying heredity as well as a congenital dyscrasia.

But let us see what Seitz says on this point in his *Meningitis Tuberculosa of Grown People*, p. 321: A person may appear strong, blooming, perfectly healthy, and at the autopsy offer no morbid appearances except some nodular formations, *but a deadly enemy was hidden all his life under the mask of apparent health*; there was a tendency in his whole being of replying to slight stimuli with tissue secretion, which were unusually rich in cells, extraordinarily inclined to cheesy detrition. The irritation takes place, and that morbid tendency shows itself immediately in the

connective tissue, etc., etc. (cases follow here illustrating this apparently good state of health, till at once the fatal disease breaks out).

Dr. Moxon, in an article on the pathological nature of tumors (*Guy's Hospital Reports*, vol. xviii, p. 300) explains nicely why cancers arise in parts which have suffered alteration of their solids through traceable *local noxious influences*, and thus we may acknowledge that the determining cause of the locality of cancer is local, and we fully agree with Moxon that there is no hæmatic influence operating in producing cancer: the cause lies deeper; and we agree far more with Seitz, who sees in tuberculosis as well as in cancer a deadly enemy, who bides his time and awaits only his opportunity to show itself in its most hideous aspect. Moxon acknowledges heredity in families, and although there may be a difference about the origin of tumors, whether from the solids or from the plasma, hardly anybody denies nowadays the local formation even of the most malignant tumors. He truly remarks, that "the likeness of the tumor to the part it grows in is a likeness of descendant to sire," and, fully admitting the constitutional nature of tumors, he puts for the time being the plasma theory in a pigeonhole, for "as yet" it is too true that we know nothing at all about it.

Arnott (*St. Thomas's Hospital Reports*, 1872) calls, with the ancient writers, every malignant tumor a cancer. Most writers of our day use the word "cancer" in a more restricted sense; hence the clashing of ideas; and it would be well if every author would give us clearly *his* definition of cancer and of malignant tumor.

We consider cancer a constitutional disorder, with a preference to certain localities, and showing itself in advancing years. To us it is the very essence, the acmé of a constitutional taint, which, according to its benign or malignant character, affects different individuals differently. We are in the habit to call this constitutional taint scrofulosis, and consider lupus, tuberculosis, cancer emanating from the same source, differing only in degree. How many questions are yet to be answered! What is psora? Is it identical with scrofulosis? Who will penetrate the veil which still surrounds the nimbus of bioplasm?

Scrofulosis, tuberculosis, ulcus scrofulosum, lupus, carcinoma, if pathology fails to answer satisfactorily all our questions, let us see whether homœopathic therapy might not be able to solve the question, and especially in such studies we rely on the histological action of our remedies as the basis of such replies.

We find enumerated among the remedies of scrofulosis: Granier (*Homœolexique*, ii, 674): *Ars.*, *Asa.*, *Baryt.*, *Bell.*, *Calc.*, *Cin.*, *Con.*, *Hep.*, *Iod.*, *Lyc.*, *Merc.*, *Ol. mor.*, *Rhus*, *Sil.*, *Sulph.* 2. *Aur. mur.*, *Carb. an.*, *Carb. veg.*, *Cistus.*, *Dulc.*, *Graph.*, *Lach.*, *Kreos.*, *Pinus*, *Staph.* 3. *Ambra.*, *Amm.*, *Aur.*, *Bar. mur.*, *Bry.*, *Chin.*, *Cocc.*, *Natr. mur.*, *Nitr. ac.*, *Nux v.*, *Petr.*, *Phos.*, *Sep.* Jahr, in his forty years' practice, gives us a still larger number; at any rate, Hahnemann's antipsorica figure largely in this series: *Calc. carb.* is to the young what frequently *Arsen.* is to the old or prematurely old. If we look at the pathogenesis of *Calcaria œstrearum*, as Father Hering calls it, we find that it is in the large class of diseases due to the disorder of the secondary assimilation that *Calcaria* finds its curative place, and in fact many of our best authorities consider it *the* remedy for scrofulosis. "The very thing which renders youth so beautiful is the wealth of juicy fluid, its softness," says Nussbaum, and this very softness is characteristic of the Carbonate of lime. The lymphatic system, as it were, prevails in infancy and youth, and just in those constitutions where the lymphatic system prevails through adolescence, nay, through the whole life, children of a larger growth, *Calcaria* will be found beneficial. It improves the imperfect formation of the blood, to which it is a fertilizer, and brings it up to a more healthy standard. Here again Buchner's adjectiva to the disease as well as to the remedy come into play, and teach us to differentiate between the Carbonate and Phosphate of lime. We find the silent enemy already preparing its poisoned shafts, where the phosphorica is indicated, the disease already made progress enough to show its mischievous doings. The physical anxiety and the physical weakness are now facts, and the former plumpness has given way to loss of juiciness. Where the former is par excellence our standard-bearer in constitutional diseases of infancy and childhood, the *Calc. phosph.* suits diseases of youth and middle age, localizing themselves in the respiratory organs (tuberculosis pul-

monum), or in the marrow of the bones. The rachitic state is already more complete; deformities are already present; after fractures the callus will not form,—all conditions requiring the use of the Phosphate of lime as a nutrition-remedy as well as a functional one. In such cases alternation is to us a necessity; we give the fertilizer in its trituration, the potential factor in its high potency.

Rachitis always brings *Silicea* before our eyes. Instead of plumpness we find a delicate, pale, even waxy complexion, excoriating discharges, indurations (organic changes have taken place, especially in the connective tissue), but the morbid process is slow and still of a benign character; even suppuration will be retarded by *Silicea*, and, if possible, resorption brought about. We know that *Silicea* is an important element in the vegetable world, hence a nutrition-remedy as well as a functional one.

In *Baryta carbonica* the induration of tissue shows itself by established facts, and we find warts and even lupoid (tuberculoid) and cystic tumors removed by the application of this remedy. Lobethal justly ranks *Baryta* below *Calcarea* in scrofulosis, for *Baryta* is one of our remedies of old age, and suits only affections of early childhood, combined more or less with a want of resisting power to the attacks of an outside world, whereas *Calcarea* will always remain our corrector of malnutrition.

What *Baryta* is to old men, *Conium* is to old women, says Hughes, and *Conium* is also a remedy of repute in advancing scrofulosis. Trinks considers the chief tendency of *Conium* to be to fluidify and liquefy animal matter, both normal and abnormal, and it is considered especially useful in cases where scrofulosis, tuberculosis, carcinomatous cachexia, and paralysis prevail. Hahnemann considers it an antipsoricum of undoubted value, and there is hardly another remedy in our whole *Materia Medica* which exhausts so quickly the nervous energy of the spinal cord and voluntary muscles. (This psoric taint will always differentiate *Conium* from Picric acid, another of our wonderful spinal remedies, but which is deficient in this psora.) Dunham says: It alters profoundly the glandular substance, the cornea, skin, uterus and its appendages. Blake considers *Conium* the most specific remedy in the early stage of scirrhus, and *Raue's Record* teems

with cases, showing the beneficial action of Conium in severe scrofulosis even, but only as long as malignancy has as yet not developed itself. Then the time for the poison-hemlock has passed, and our mind reverts to Arsenic, Aurum, Carbo-animalis, perhaps also to some of the acids.

Such an acid is the Chromic acid, which, in its combination with Potassa, Blake considers, theoretically, most strongly indicated in lupus and most successful in practice. Drysdale (*Brit. H. M. M.*, i) considers it a pure irritant to the organic tissues, extending beyond the mucous membranes and the skin to the fibrous tissues on the one hand and to many of the glands on the other (the very tissues affected by carcinoma). The ulcers produced by Kali bichromicum have hard bases and overhanging edges, are deep and generally dry, corresponding to that ulcer whose action is too indolent to form healthy granulations, whether this indolence arises from the state of the parts or of the constitution. After healing we find these ugly depressed scars so often seen in scrofulous persons. So far only a few cases have been reported of cancer treated with the bichromate, nor can we expect that this drug reaches in its healing action the crowning curse of scrofulosis, carcinoma, in its different manifestations. Lupus is a very chronic disease, from which the patient may suffer for years, and the long-lasting chronic action of the bichromate corresponds well to it.

Is *Arsenicum*, so frequently used and abused in cancer, a remedy for scrofulosis? Decidedly so; but it will be hardly needed in the lesser degrees; it is one of our batteries, kept back till the deadly enemy shows its most virulent fangs. Here it will alleviate the burning pains, the constant restlessness, and give momentary peace to the weary sufferer. It is said to have cured epithelioma of the lip and face, but only alleviates glandular cancer. Teste (*M. M.*, 217) considers Arsenic indicated in affections of persons exhausted by excesses (what greater excess than an exhausting chronic disease), of a *lymphatico*-nervous constitution, disposed to dropsy and tethers, partial or general atrophy. A comparison between Kali bichromicum and Arsenicum is still needed, inasmuch as their consonances are as remarkable as their dissonances.

*Aurum* has cured lupus as well as epithelial cancer of the face, but, reading Volkmann's essay, we might begin to doubt the accuracy of the diagnosis, which was erroneously given even by physicians well read in histology. That this metal affects deeply the lymphatic glandular system even allopathic authorities acknowledge, and Burt hopes that the (syphilo) scrofulous element may be often extinguished by the steady use of the Muriate of Gold.

Passing by our other anti-scrofulosa, let us glance at our home remedies; and here the first remedy deserving our consideration is certainly:

*Hydrastis Canadensis*.—Hale (*Therapeutics*, p. 315) acknowledges its usefulness in lupus, rhagades, and excoriations, and McLimont claims to have treated three cases of lupus successfully with the external and topical use of the Golden Seal. Our English colleagues praised its virtues in carcinoma, but later researches narrowed these virtues down to the power, which it really possesses, of improving the general health of broken-down patients. The same negative results were obtained from other remedies, and Hale is right in putting interrogation points to all his remedies in relation to cancer; but still, "the ounce of prevention" is what we want, and here *Hydrastis* shines as a remedy of the first order in its power of removing obstructions, and thus in strengthening the constitution in its fight against the silent enemy.

*Phytolacca* acts in a similar manner, and thus, in the early stages of lupus or cancer, it may take rank with our antipsories. Its specific action on the mammary glands is well known, and, as it has removed tumors and nodosities in these glands, the diagnostic error of scirrhus is pardonable, as even a Volkmann amputated the breast from the same error and no relapse followed.

From *Calcarea* to *Aurum* and *Arsenicum*, from simple malassimilation to incurable open carcinoma, step by step the enemy encroaches upon our territory, till nature, exhausted, gives way and succumbs. It is a vain attempt to look for a cancer-remedy, but tuberculosis, lupus, and carcinosis can be prevented, and this is the task which ought to be always before us as family physicians, as the true friend of those who appoint us guardians of their children.



**ARTICLE XVIII.—Pulmonary Fistulæ.**

By E. J. FRASER, M.D., SAN FRANCISCO.

IN March, 1874, Dr. T. C. Coxhead, of Oakland, invited me to see a very interesting case which he had under treatment.

The patient, a gentleman thirty-five years of age, was suffering at the time with a very violent and persistent fever, which had resisted careful medication for more than a week.

At the same time I was shown several chronic abscesses over the sternum and right side of the chest, which had been discharging for a period of about seven years.

After recovering from his fever, he removed to this city, where he came under my care.

The history of his case runs about as follows :

In March, 1855, he had a very severe attack of pleuro-pneumonia. His physician prescribed Calomel three times per day for seven days (quantity not known). He also applied Cantharides paste over his chest four times in succession, as fast as the nature of the blistered surface would admit.

In April, 1858, he had another attack, of like character and similar treatment.

In February, 1860, an abscess formed upon his chest, which was lanced upon the 28th day of that month. It discharged for a period of about four months, when it healed. It remained well until the autumn of 1864, when it formed again. It was lanced, but healed again in about two weeks.

In September, 1867, a small abscess formed just below the cartilage of the ninth rib of the right side. It was lanced and extensively probed, and he says, "from brutal treatment it got worse." He says that the probe was pushed up behind the ribs into the cavity of the chest, a distance of six inches. When he came under my care he had nine abscesses over the sternum and right side of the chest, all discharging freely. The right side of the chest was fuller than the other, and was dull under percussion.

About the 1st of August, 1874, he was attacked with another violent fever, which continued about five days, when a violent cough

set in. Acon., Bell., and Hyos., all of the 3d decimal attenuation, were the remedies used at that time.

After the fever subsided the abscesses discharged more freely, and the hacking cough became more persistent and troublesome. About the 20th of August the terrible cough, with quick thready pulse, profuse night-sweats and hectic flush, made his prospects for recovery seem very slight indeed. Phos., Phos. ac., Silic., Carbo veg., and Lach., of the 30th and 200th, were used.

About the 27th, two of the abscesses, situated on the right side, between the fifth and sixth ribs, emitted air-bubbles whenever he coughed.

The next day a hæmorrhagic condition supervened. The blood spurted freely from the two aforesaid abscesses whenever he coughed, and at the same time the air came bubbling and hissing through. He coughed up blood, and his stools were thin and black. Numerous ecchymosed spots appeared upon his chest, arms, and neck. His friends all gave him up to die, and so did I, almost.

As a *dernier ressort*, on the 29th I gave him Secale, 200th. It acted like magic. He began at once to improve, and his recovery was steady and regular from that date.

The pulmonary fistulæ closed in about a week, and in two weeks he was able to be up and dressed. He did not attempt to do any work (being a joiner by trade) for a period of five or six months. In April, 1875, he was able to do a full day's work, and has worked regularly ever since to the present time (August, 1875), with two slight interruptions from fever, which Aconite<sup>3x</sup> controlled. His general health has been better since his terrible sickness than it was before. About half of the abscesses have healed, but the balance continue to discharge a little. The orifices look like fistulous openings situated in the bottom of copper-colored excavations. The excavations are about the diameter of a twenty-five cent silver coin.

The copper color would naturally cause one to suspect a syphilitic origin; but he says that, when the abscesses first made their appearance, he had never had an opportunity to contract syphilis in the usual way. He thinks that he did not receive it by hereditary transmission, but of course is unable to say positively.

During the attack above described he was seen by Dr. Foote, of Stamford, Conn., who was on a visit to this city; also by Dr. W. N. Griswold, and Dr. Sidney Worth, of this city.

The condition of the patient has been greatly improved by the use of Nit. ac. 200, administered at long intervals.

In conclusion, I would say that, as a rule, I am opposed to ordinary "reports of cases," as too frequently they do not carry with them any valuable information, the only news being that the medical writer has had "a case."

In the above case I disclaim anything new, as pulmonary fistulæ, hæmorrhagic diathesis, and hectic coughs, sweats, and fevers have been seen before, although perhaps not in the above combinations.

Nor do I claim any unusual skill in treatment. Any strict homœopathist would probably have done very nearly as I did.

The lesson which I have learned by this and similar complicated and desperate cases, and one with which I desire to inspire others, is that no case is really too desperate to make us hesitate to study closely and apply carefully the true homœopathic remedy.

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## ARTICLE XIX. — On the Differential Diagnosis of some Spinal Diseases in Relation to Therapeutics.

By S L

At several meetings of the Hahnemann Academy of New York, the question was discussed, whether the study of the physiological (pathopœtic) action of drugs were beneficial or not. The chief objection raised against such studies was that it would lead to generalization, and that thus the very essence of Homœopathy, strict individualization, would be entirely, or at any rate too much, neglected. In order to show how frivolous such an opposition is, let us take up the subject of paralysis and tremors, and let us study our standard works on *Materia Medica*, and even on *Pathology*, about it. Thus Raue (*Pathology*, 523), puts all sorts of tremors under one head, and adds a few lines on paralysis agitans; the same may be said of the chapter on paralysis (p. 524), and it is really astonishing how generalizing the therapeutic

hints are given. What benefit can it be to know that “Æsculus glabra is recommended for paralytic affections of the lower extremities,” or that Zincum has “paralysis worse after drinking wine!”

Baehr (*Hom. Therapie*, vol. i, 187), does not even mention tremors, and throws all sorts of palsies also into one heap, and acknowledges the difficulty in treating such cases, as there are so few symptoms to guide us in the selection of the right remedy.

Kafka (*Hom. Therapie*, vol. ii, 166), gives us of all diseases of the spinal cord only meningitis spinalis and myelitis, and passes tabes dorsalis off with a few pages; of tremors not a line; and still the connection between those morbid affections is so manifest that we feel astonished to see them passed over so lightly.

Hughes (*Therapeutics*, p. 143), tries to penetrate somewhat deeper, but yet fails to give us clear indications for the selection of a remedy. The same may be said of Ruddock.

Leyden, in his classical work, *Clinic of Spinal Diseases*, truly remarks that, ten years ago, the diseases of the spinal cord were hardly known, and that only in the last decade the study of these morbid affections has made such rapid progress that light begins to dawn where formerly so much darkness prevailed. Let us try to make use of these studies, and adapt to it carefully the treasures garnered up in our storehouse of *Materia Medica*; paralysis may then gradually become more amenable to treatment, and suffering humanity may eventually reap the benefit of our pathological individualizing studies, as well as of our physiological studies of the action of our remedies.

We copy mostly from another classical work which has lately enriched our literature, from Charcot's *Clinical Lectures on the Diseases of the Nervous System*:

*Differential Diagnosis between PARALYSIS AGITANS (Shaking Palsy) and MULTIPLE SCLEROSIS (Sclerose en Plaques Disseminées).*

*Paralysis agitans*, divested of all foreign elements, is a mere *neurosis* in that sense, that such an affection shows no organic change. It mostly attacks persons of more advanced years, above forty or fifty, although Duchesne observed it exceptionally in a

young man of sixteen, but it is wrong to classify it among senile diseases.

*Ætiology.*—1. Cold moisture, especially living in deep, dark basements, where fresh air and sunlight cannot penetrate. 2. Mental emotions, especially fright, anger, etc. 3. Irritation of peripheric nerves by lesions or contusions.

*Symptoms.*—1. A *tremor* present, whether voluntary movements are performed or not with the affected limbs, increased by mental excitement, by physical exertion, or by any cause capable of depressing the powers of the system. *The tremor continues during rest.* 2. Inability to keep his balance when stepping forwards, or an inclination to move forwards or backwards, *propulsion or retro-pulsion*, without any vertigo; the patient feels himself forced to move rapidly forwards or backwards, and he can hardly stop, being forced to run for a centre of gravity, which he cannot find. A peculiar carriage of the body and of the extremities, the immobility of the eye, the inflexibility of the features, also, are important symptoms.

The *course* of shaking palsy is slow and progressive. It may last for years (thirty), and death sets in either from an intercurrent disease or from marasmus, a kind of nervous exhaustion.

*Periods of the Disease.*—1. *Slow appearance.* At first the tremor may be limited to one extremity, to a finger or thumb, and may remain thus for a long while, but even then there are peculiarities to be noticed; thus, where the hands are attacked, the patient approaches the fingers to the thumb, the wrist in rapid concussions to the forearm, the latter to the upper arm. Though the tremor may be at first transitory, gradually it becomes more obstinate, and intense and progressive. If, *e. g.*, the right hand was attacked, by and by the right foot follows, then the left hand and left foot. The hemiplegic and paraplegic forms are more frequent than decussation. *The head nearly always remains free*, even in the most intense cases.

2. *Sudden appearance.* After a severe fright, or intense emotion, one or all extremities may be suddenly attacked. Gradual amelioration may set in, but in most cases the disease slowly, but surely, will run its course.

3. *Acme.* The trembling is nearly permanent, but still aggra-

vated by mental emotions, or by the desire to perform some voluntary movement. It may also become aggravated in paroxysms (like all neuroses). *Natural as well as chloroform SLEEP causes a cessation of the convulsive concussions. Head and neck remain intact;* the whole features show rather a sorrowful expression; mastication is perfect; only a trembling of the tongue can be observed. Speech is slow, and it seems that it needs great exertion to utter a word; in severe cases speech may even become trembling and interrupted. Although the respiratory muscles do not partake of the convulsive restlessness of the extremities, still some patients complain of a constant sensation of oppression.

Another symptom is *rigidity*, which at a certain stage of the disease attacks the muscles of the extremities, of the thorax, and usually also of the neck. As a rule, the flexors are most severely attacked. Where the muscular stiffness becomes permanent, we find the head, in consequence of the rigidity of the anterior muscles of the neck, strongly inclined forwards, and also the trunk somewhat bent forwards when trying to stand erect; the elbows stand slightly off from the body, the forearm slightly flexed to the upper arm; the hands, inclined to the forearms, rest on the loins, and show deformities. The thumb and index finger are stretched, and approach each other as when writing; the other fingers are flexed, with an inclination towards the ulnar side, and the deformed joints of the fingers remind one of arthritis deformans, but there is neither swelling and rigidity of the joints, nor swelling of the bones and crepitation, as observed in arthritis nodosa. The rigidity of the lower extremity is sometimes so exquisite, that we might think on paraplegia with contraction. *This rigidity renders all motion arduous;* it seems as if all joints were grown together, and this forward inclination is the cause of the tendency to fall forward when walking. It is remarkable, that muscular rigidity is in rare cases a symptom of the first stage, and observed before the tremor, which might be only limited to one hand, although in most cases we only see it in the advanced stages of shaking palsy.

There is *not so much a genuine debility of motor power, as rather a backwardness in the execution of the movements.* In spite of his trembling, the patient is able to execute all motory acts; but it

takes him a long time to do them, and it is just the same in talking; a relatively considerable period elapses between the thought and the speech, and thus the slightest movement tires the patient out.

Another characteristic symptom is *the permanent sensation of tension, or of drawing in the muscles, combined with prostration*, showing itself especially after the paroxysms of trembling, and an undefinable uneasiness, so that the patients continually try to change their position. *Sensitiveness remains intact*, so that the patients are fully sensible of heat and cold, of touching and pricking the-skin, etc. A most painful sensation is rather observed in such patients, *an habitual excessive sensation of heat*, so that even in winter they cover themselves very lightly. This sensation of heat is especially felt in the epigastric region and on the back, but it may also attack the face and extremities. It has not all the time the same intensity, is worst after fits of trembling, and during such paroxysms the patient may perspire freely, so that the linen has to be changed. But it may be also marked in patients where the tremor is slight and who do not perspire. With this excessive sensation of heat, and even with high-graded tremors, the temperature of the body remains normal ( $37.5^{\circ}$  in ano). Charcot and Bouehard show that static muscular contractions, *i. e.*, such where tonic contractions prevail, as in tetanus, epilepsy, increase the temperature of the body; whereas dynamic muscular contractions, *i. e.*, where clonic movements prevail, as in chorea and shaking palsy, show very little influence on the temperature of the body. The urine ought to be examined in this disease, in order to find out whether the constant muscular exchange produces any modification in its chemical composition, and especially whether the sulphates are increased.

The terminal period, where the patient is nearly constantly confined to his bed, gives us muscular atrophy with fatty degeneration. Intelligence and memory vanishes, strength is gone, decubitus takes place on the sacrum, the tremors gradually decrease, and the patient dies from exhaustion. In other cases, an intercurrent disease hastens the fatal issue.

The autopsy has so far failed to give any clue for the anatomical changes of paralysis agitans. Charcot found in three cases

obliteration of the central canal of the spinal cord from proliferation of epithelial cells lining the ependyma, proliferation of the nuclei in the neighborhood of the ependyma, and pigment formation of the nerve-cells.

*Multiple Sclerosis, Sclérose en Plaques Disseminées.*

Multiple sclerosis is not exclusively a spinal disease; it also attacks the brain, the pons, the medulla oblongata, the cerebellum. We deal here *with a relatively coarse organic change*. These more or less irregular gray spots, within strict limits, and vividly differing from the neighboring parts, are either discrete or confluent, and are genuine nuclei, deeply penetrating the tissues. It is only rarely that we find such plaques in the cortical substance of the brain, but we meet them in the walls of the ventricles, in the white substance of the centrum ovale, in the septum pellucidum, in the corpus callosum, and finally in certain regions of the gray substance; the nucleus dentatus cerebelli is also more or less frequently affected. The medulla oblongata, pons Varolii, and the isthmus, are frequently the seat of sclerotic foci, either peripheric or deeply penetrating. In the medulla oblongata the foci may take their abode, or they may be found simultaneously in the olives, pyramids, corpora restiformia, and the posterior region, where the initial nuclei of the nerves, leading to the bulbous, are lodged. The plaques in the pons are seated at the anterior inferior surface.

Through the pia mater of the cord we may frequently recognize the gray spots, which through the influence of the air take on a rosy color, similar to the meat of salmon. Every section and every part of the spinal cord may be attacked, the gray as well as the white substance in the cervical, dorsal, or lumbar region; even the nerves are not spared. Some, looking perfectly normal, may come out at their place of origin from a sclerotic focus, and others show sclerotic foci in their course, exactly like those found in the nerve-centres of cerebral nerves; the nervi optici, olfactorii, and the fifth pair are most frequently attacked, and in the spinal column sclerotic foci are found in the anterior as well as in the posterior roots. This multiplicity of localization gives to the



disease its protean character and causes so many forms (*sclerosis cerebrospinalis, bulbaris or cephalica, spinalis*).

Microscopically the sclerotic foci are either prominent or they stand on a level with the adjacent parts, and when old are somewhat depressed. They are of a firm consistency, give, when cut through, smooth surfaces, whence a transparent fluid is discharged.

Examined with the microscope they are seen to consist of the neuroglia, which, to a great extent, has taken the place of the nervous tissue, and of the remnants of it in the forms of fibres, nucleated cells, and free nuclei. They are formed, therefore, by the hypertrophy of the connective tissue, at the expense of the nervous tissue proper.

*Symptoms—Cerebrospinal form.*—1. *Specific rhythmical tremor only during the execution of certain voluntary movements, and ceasing when the muscles are in perfect quietude.* The gesticulations with the head, trunk, and extremities are so severe that some authors called this disease paralysis choreiformis. 2. As cephalic symptoms we meet *diplopia* during the initial stage, which mostly passes off; *amblyopia* more frequently, but hardly ever leading to total blindness; and *nystagmus*, observed in nearly half the cases. These oscillations are sometimes only observed when vision is fixed on a certain object. 3. A peculiar *disturbance of speech*, which is slow, dragging, sometimes so that it cannot be understood; the tongue is thick, and reminds one of intoxication; the syllables are slowly pronounced, and it seems as if the patient makes a pause between each syllable. 4. *Vertigo*, from the very beginning of the disease. Everything appears to turn in a circle, and to keep his balance the patient has to hold on something. This dizziness may appear in paroxysms, and it may keep on uninterruptedly for some time, with tremors and paralysis of the extremities. 5. *Peculiar expression of features.* Look uncertain and wandering; lips hanging down and mouth half open; the features have a foolish, nearly idiotic expression; weak memory; intellectual and emotional powers decreased. In some cases mania de grandeur was observed, or other mental alienations. 6. *Paresis of the extremities.* From the very beginning a weakness in the motor power may show itself without any disturbance of sensibility. It mostly attacks first the lower extremities, and

after some time the upper ones. Even remissions may take place, so that it seems as if the debilitated lower extremities regained their former energy. The sphincters of the bladder and anus are only rarely affected, and trophic disturbances of the muscles are hardly ever observed in multiple sclerosis. 7. *Permanent contraction of the extremities, spinal epilepsy*, observed only in later stages. It appears at first only at irregular intervals or from emotions, during which the lower extremities become stiff in extension; by and by permanent contraction takes place, and we find the thighs extended on the hips, the legs on the thighs, the feet in the position of pes varo-equinus, and the knees firmly pressed together. Only in rare cases, and then only very late, flexion gains the upper hand over extension. We deal here with a spasm, which simultaneously attacks the antagonistic muscles, and it will be just as difficult to stretch the extremities when they are flexed as to flex them when they are extended.

Multiple sclerosis may be divided in three stages: 1. From the appearance of the first symptoms to that time when the spasmodic rigidity of the extremities renders the patient unable to work. 2. A long period, during which the organic functions remain intact, although he is at the utmost only able to hobble about his room or is already fully laid up. 3. Aggravation of all symptoms, nutrition suffers, and death ends the scene.

The *first stage* may begin with cephalic symptoms, constant vertigo, diplopia, slowness of speech, nystagmus, a complex of symptoms, leading us immediately to the diagnosis of multiple sclerosis, which will be rendered certain by the consequent tremors and paresis, or the spinal symptoms may be the first to appear, and the patient may feel for months, nay even for years, a weakness of the lower extremities, which gradually increases, but the total absence of atrophy, of any organic paresis, and of any disturbance of sensibility, are valuable hints; or the disease may set in with gastric or gastralgie paroxysms, with vomiting and syncope.

The *second stage*, with its spasmodic rigidity, appears mostly two, four, six years after the appearance of the first symptoms.

The *third stage* shows itself by a gradual decline of the organic function, loss of appetite, diarrhœa, emaciation; the former dul-

ness of mind passes into idiocy, speech becomes entirely unintelligible; by and by the sphincters become paralyzed, and an ulcerous inflammation of the vesical mucous membrane sets in; decubitus follows; sometimes purulent or putrid infection, which soon closes the scene; but in many a case an intercurrent disease, as pneumonia, cheesy consumption, dysentery, etc., cuts life short.

Many a patient succumbs during the second stage from *paralysis bulbaris*. With increasing disturbance of speech we then find at first paroxysmal and, by and by, constant difficulty of swallowing; dyspnoea follows, and the patient dies during a paroxysm from suffocation. In all such cases a sclerotic focus was found at the base of the fourth ventricle, where it was interlaced with the initial nuclei of the nerves going to the bulb.

*Multilocular sclerosis usually lasts six to ten years, whereas the normal duration of paralysis agitans is far longer.*

#### *Progressive Locomotor Ataxia; Sclerosis of the Posterior Column of the Spinal Cord.*

*Initial Symptoms.*—Dull, heavy pain in some parts of the spinal column, soon followed by sharp, electric-like pains, shooting down the limbs along the course of the nerves; or cerebral symptoms, consisting of vertigo, epileptic fits, diplopia, ptosis, and defective accommodation, or gastric, showing itself by vomiting, constipation, or diarrhoea; or, finally, by various abnormal sensations.

*Second Stage.*—Disorders of motility prevail, dependent upon the already existing *diminution of cutaneous sensibility*; inability to co-ordinate the muscles, and thus to execute with precision the various voluntary movements (patient has to *look* at his feet in order to stand alone; the characteristic, abrupt, jerking gait, separating the feet to a greater extent than normal, in order to keep equilibrium). When the lesion is above the origin of the nerves, which form the brachial plexus, the patient finds that the ends of his fingers have lost their acute sensibility, and that there is restraint in the management of the fingers. The reflex power is generally notably increased; even the rubbing of one leg against the other

is sufficient to cause powerful contractions; genital system frequently excited, paralysis of the bladder, constipation. Remissions of several years are frequently observed, and the course of the disease is slow (ten to fifteen years).

*Third Stage.*—The loss of motor power is now a prominent feature; the muscles become atrophied; bed-sores make their appearance; there is anasarca, and in some cases affections of the joints may occur, due to accumulation of liquids in the synovial cavity, the result of defective nutrition of the bony, cartilaginous, and soft parts connected with the joint. Death either is a consequence of the spinal lesion or from intercurrent diseases.

Hammond (*Diseases of the Nervous System*, 510), found that, in sclerosis of the posterior columns of the spinal cord, the lesion generally involves the posterior nerve-roots, the posterior white substance, and the posterior cornua of gray substance. Hence the cord loses both the ability to transmit and to generate nerve-force, and *the brain is brought to assist in the determination of movements through the sense of sight*, in order to hold his balance.

*Ætiology.*—1. Niemeyer denies that *venereal excesses* are the chief cause, although other pathologists lay great stress on it. 2. *Colds and bodily over-exertions*, especially when both simultaneously take place. 3. *Suppressed perspiration of the feet*. So much is certain, that many patients suffering from tabes dorsalis, complained at an earlier period of excessive perspiration of the feet. 4. *Syphilis*.

#### *Therapeutics.*

Charcot acknowledges that there are no internal remedies for the treatment of paralysis agitans, nor has the treatment with static electricity nor with the induced current shown more benefit. Remak and Reynolds recommend the constant current. The same may be said of multiple sclerosis, where the muriate of gold, the phosphate of zinc, nitrate of silver, strychnine, arsenic, belladonna, ergot, bromide of potash, and many others were tried and found wanting. The constant current promises also here more favorable results, but new experiments are necessary to prove its value in these disorders. Hydrotherapeutics were tried in some cases with only temporary benefit. In sclerosis of the posterior column, Hammond has great confidence in large doses of ergot

combined with the bromide of potash, and in some cases he obtained amelioration by the use of chloride of barium.

Let us see whether, without a clear diagnosis, Homœopathy has not done better, and then let us compare the totality of symptoms with the symptoms given in our *Materia Medica*.

Thus we read in Raue's *Record*, ii, 192, a case of partial paralysis of the lower extremities, in consequence of over-exertion and being drenched in a rain, of five years' standing. She has to drag her limbs in walking; cannot lift them sufficiently from the ground; *sensation is likewise much impaired in the lower extremities*, so that she feels the insertion of a pin only if it goes deep enough to draw blood; legs are always cold, and look bluish; constipation, burning at the anus, occipital headache, urination undisturbed; no painful spot in the whole length of the spine. *Nux vomica*<sup>200</sup>, in water. Well in about six to eight weeks. (Bojanus, *A. H. Z.*, 80, p. 163.)

*Epicrisis*.—All the symptoms point to sclerosis of the posterior column; as the spine was not tender to pressure, we may exclude myelitis; the impaired sensibility, the awkward gait, the normal state of the sphincters of the anus and vesica show that the disease was still in the second stage. The allopaths never witnessed any benefit from Strychnine, but a potency of *Nux vomica* accomplished what the crude drug fails to do.

*Paralysis Agitans, in consequence of Fright and Rheumatismus, cured by Tarantula* (*R. R.*, v, 270).—Mrs. K., æt. 61, of strong constitution. In 1863 she suffered from severe pains in her left arm, so that she could not put her hands to her head, which left some trembling of the hand, which became aggravated by every mental trouble. In 1870 a fire broke out in her neighborhood, frightening her dreadfully, and since then the trembling has increased, and affects now all her extremities. The pains became so intense that she could not rest during the night, and the itching and crawling on her left leg obliged her to rise and to walk about during the night. Simple baths aggravated her pains, and the only place where she felt somewhat comfortable was in the fresh air, even during the night. After failing to get relief from private and hospital practice, she came in my hands. *We found intelligence and memory considerably diminished, trembling, pricking, and*

much sensation in the phalanges of the hands and feet, so that she was unable to perform any fine work. Motility and sensibility unaltered; neither paralysis, anæsthesia, nor hyperæsthesia. *The head trembled just as the left foot and arm*, and a slight tremor could be perceived on the tongue when she opened her mouth. She could only sleep for a few minutes, as the pains woke her up in spite of her sleepiness, and this want of rest told fearfully on her. No appetite; chronic constipation. Since her menopause, she had acne in the face. *The ophthalmoscope showed a slight hyperæmia of the retina.* After failing with Bell., Nux v., Jod., Secal., Crotal., further studies led to *Tarantula*<sup>12</sup>, in water, a tablespoonful every three hours. After a steady treatment for six months with the same remedy we could pronounce the patient perfectly cured. (Cramoisy, *Bullet. de la Soc. H. M. de Paris.*)

*Epicrisis.*—*Tarantula* cured the case, although the diagnosis was wrong, inasmuch as the symptoms clearly point to a multiple sclerosis, still in its first stage.

*Paralytic Rheumatism* (R. R. vi, 201).—A soldier, exposed to drenching rains, had drawing pains in back and legs; could walk only with great exertion; feet felt lifeless; sensation in spinal cord as if quicksilver moved up and downwards; paralytic heaviness in arms, preventing work; *vertigo seldom and transient; movements of co-ordination normal*; some lumbar vertebræ sensitive to touch; transient weakness of sight, cause undiscovered; anæmia, emaciation. *Phosphor*<sup>12</sup> cured. (Lorbacher.) A clear case of myelitis rheumatica.

It would be easy to multiply cases, but space forbids. We find in Raue's *Record*, iii, p. 232, the following remedies recorded for locomotor ataxia: *Æsculus hipp.* (Lippe), *Aluminum met.* (Boeninghausen), *Argent. nitr.* (Grauvogl), *Arsen.* (Baehr), *Bellad.* (McClatchey), *Causf.* (Baehr), *Cocculus* (McClatchey), *Cuprum* (Baehr), *Gels.* (McClatchey), *Lachesis* (Baehr), *Nux moschata* (Lippe), *Nux vom.* (Lippe), *Pinus sylv.* (McClatchey), *Phosph.* (Lippe), *Plumb.* (Krieger), *Silicea* (Black), *Stram.* (Guernsey), *Sulphur* (Lippe).

Homœopathic practitioners recommend in paralysis, according to the most prominent symptoms: *Anacardium*, *Ars.*, *Bell.*, *Bry.*, *Carbo veg.*, *Caust.*, *Cocculus*, *Colch.*, *Con.*, *Cupr.*, *Dulc.*, *Hyosc.*,

Kali carb., Lauroc., Natr. mur., Nux v., Oleand., Op., Phosph., Plumb., Rhus, Sec., Sil., Stan., Stram., Sulph., Zinc.

Hale, in his work on therapeutics, recommends for paralysis agitans, Bromide of Potash, Physostigma, Cannabis indica, and Cod-liver oil; for paraplegia, *Æsculus glabra* and Hipp., Cannabis ind., Caulophyllum, Ergotin, Hedecoma, Picric acid, Strychnia; for paralysis, Physostigma, Cannabis ind., Gels., Guaco, Guaraea, Strychnia.

Let us now try to compare the symptoms of the three affections, which we tried to study, with the remedies; let us see which remedies give us tremors, as found in multiple sclerosis and paralysis agitans. The tremors produced by mercury and lead are well known, and both remedies claim to be homœopathic to it. Eulenberg (*l. c.*, 703) remarks that the mercurial neuroses, known as *tremor mercuriales*, show a decided similarity to paralysis agitans, and some English authors, as Copland, perfectly identify it with it. We also find here the primary appearance of the tremor, the same variations in in- and extensity; the same addition of secondary paresis; the same accompanying cerebral, especially psychical symptoms. Kussmaul considers such a state not merely as a sequel of anæmia, but a genuine action of mercury on the brain, inasmuch as electromuscular contractility and reflex irritability remain intact.

*Tremor saturninus* hardly ever attacks all muscles, and remains mostly limited to the upper extremities and to some muscles of the face (orbicularis and levator anguli oris). It does not show an equal similarity to paralysis agitans, but we find in lead poisoning other disturbances of innervation, paralysis, anæsthesia, amaurosis, and the manifestations of the so-called encephalopathia saturnina; delirium, coma, epileptiform convulsions, etc. Other symptoms of chronic lead intoxication (colic, paralysis of the extensors, arthralgia, etc.), constantly precede the tremor.

*Tremor Potatorum*.—In chronic *alcoholismus*, tremor is a frequent symptom. It mostly begins in the hands, spreads to the upper and lower extremities, trunk, even to the lips and tongue, and may grow to such an intensity that the patient can neither walk nor stand. The tremor is worst mornings, whereas the use of liquors may moderate it. Here also we meet a gradually in-

creasing muscular debility and paralysis, and manifold disturbances of innervation (tingling, arthralgia, anæsthesia, clonic and epileptiform convulsions, and the well-known symptoms of delirium tremens).

We have seen that the excessive use of alcoholic beverages produces locomotor ataxia, and we might therefore conclude that whenever this is the *fons et origo mali*, a potency of alcohol might act beneficially. That alcohol produces sclerosis is well known, for it is constantly in use on account of its quality of hardening soft tissues for microscopic labors.

Plumbum must become a grand remedy in multiple sclerosis, for cases are on record where parts of the nervous centres were found indurated. We find in lead "Sydenham's tremor a debilitate," and the lead palsy is preceded by the tremor saturninus; the very absence of anæsthesia corresponds to multiple sclerosis; in both a weakened state of the motor power prevails, with loss of memory, amblyopia, the bottom of the eye is black, and not turbid, sunken features, with an expression of sadness. The trembling is accompanied with a feeling of weakness, and weakness of the muscular contractions. The trembling affects only one part or limb, rarely both limbs at the same time; but it may also affect the tongue, lips, and organs of speech, but it never takes place simultaneously in all those parts. But what sort of a tremor does plumbum produce? does it only take place during voluntary movements, a symptom so characteristic of multiple sclerosis, or at irregular intervals? This very tremor proves that our provings are not yet scientific models; that it still needs closer observation and more strict individualization to get at the full picture of a remedy. The anæsthesia saturnina is a secondary symptom, if present at all.

English physicians consider paralysis agitans and *mercurial tremor* identical. Hughes (*Pharmacodynamics*, p. 392) remarks that the prominent nervous phenomenon of mercurialization is an increased susceptibility of impressions (a neurosis). Idiopathic cerebral symptoms are sleeplessness, loss of memory, delirium, apathy; the sufferers may die comatose and hemiplegic, and the *cerebral hemispheres, one or both, are found after death in a softened*



condition,\* with effusion in the ventricles. Among the symptoms of Mercury (solub.) we read: "Intolerable painful weariness in the arm when leaving it for a long time in the same position; he has to stretch and bend it, the stretching being the more pleasant; jactitation of whole muscles of the right arm; involuntary twitching and moving forward of the lower limbs; trembling when walking, worse about the knees and in the inguinal region; the limbs give way; sensation in the soles of the feet as if standing in cold water, accompanied with a burning sensation in these parts; constant uneasiness in all the limbs, he is unable to keep them quiet; he is unable to remain seated for even two minutes on account of jerking in the lower limbs, etc., etc."

Brown-Séguard and Hammond praise *Barium* in paralysis agitans. Our school considers Baryta a grand remedy in senile diseases, and it is well known that the Muriate of Barium destroys the irritability of the voluntary, but not of the involuntary muscles. "Sense of oppressive anxiety, accompanied with the illusory notion that he is walking on his knees without legs, the locality around him likewise appearing transformed; vertigo, with sense of turning before his eyes; convulsive jerkings of the hands and feet; paralysis of the upper and lower limbs; general muscular weakness; periodical attacks of convulsions, with excessive jactitation of the limbs." From the symptoms alone we hardly know for which disease Baryta might correspond, and, as we have better remedies, we hardly will apply Barium except after mature consideration of the totality of the symptoms.

How is it with Strychnine and its matrix, *Nux vomica*? Tetanic symptoms certainly differ from mere tremors, but we have seen that Charcot (*l. c.*, p. 267) shows us in multiple sclerosis an affection which has been considered merely accidental, although it belongs fully to the disease, and only marks its beginning.

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\* Ordenstein made three autopsies of persons succumbing to paralysis agitans. In one case, where the disease had lasted thirty years, he only found rarefaction of the nerve-tubes; in another one, softening of the pedunculi cerebri and some loss of substance near the pons; in the third the result was negative. Simon, of Hamburg, reports also negative results in four cases, although he closely examined the sympatheticus (*Eulenbergh, Lehrb. d. Nervenkrankh.*, 705).

These are the *gastric or gastralgic attacks*, which are sometimes very severe, with repeated syncopes and vomiting. They also reappear sometimes during the course of the disease, and complicate the picture of the disease. Zenker also observed such a gastralgic affection during the initial stage of locomotor ataxia. Gastralgia may then coincide or alternate with the lightning-like pains of the extremities, with the diplopia or perhaps also with the insecurity in walking with closed eyes. Traube highly praises the use of *Nux vomica* in atonic dyspepsia and in another form characterizing itself by anorexia, paroxysmal pains in the gastric region, with eructations. In paralytic affections, with the exception, perhaps, of reflex paralysis, the old school denies any beneficial action to *Nux vomica* as well as to Strychnine, but Hahnemann (*Mat. Med. Pur.*, iii, 145) teaches us better, and we find many a good symptom corresponding to multiple sclerosis as well as to sclerosis of the posterior columns, thus: Vertigo, sensation as if the brain turned in a circle, with momentary loss of consciousness; vertiginous wavering when walking, as if one would fall to one side or backward; complete obscuration of sight for a few hours; (the gastric symptoms are too well known and do not need repeating); in the extremities we find more of a jerking sensation than tremors, hinting thus to locomotor ataxia with its abrupt jerking gait; then the muscles of the extremities become painful, as if bruised, more so during motion than in rest, and finally paralysis prevails; hence, first, vacillation and unsteadiness of the lower limbs; sudden sensation of weakness in the upper and lower limbs; tensive pains in the calves, etc., etc.

*Secale cornutum*, *Ergot*, and *Ergotin* are also recommended. Hammond (*l. c.*, 513) remarks: "As in the corresponding affection of the antero-lateral columns, Ergot in large doses is often beneficial in the early stages of posterior spinal sclerosis, characterized by the presence of the shooting electric pains;" and Charcot acknowledges that he saw no benefit from it in paralysis agitans, and does not mention it in sclerosis. Headland (*On the Action of Medicines*, p. 261) even denies any action of Ergot on the nerves, except on the muscular nerves of the uterus. Wernick (Binz, *Arzneimittellehre*, 104) experimented with Ergot, and found that it has a primary action on the tonus of the blood-

vessels, that the veins become considerably dilated and unusually hyperæmic, and thus causes a contraction of the emptied arteries. This contraction of the arteries is independent of the vasomotory centre, for Brown-Séguard showed that division of the sympathetic shows no influence on it. The blood-pressure sinks and the heart labors with an insufficient quantum of blood, hence anæmia in the pia of the brain and spinal cord, in the skin, muscles, intestines, etc. The convulsive form of ergotism gives us tonic rather than clonic spasms, accompanied with more or less paralysis and anæsthesia, and Dr. Bloede's cases of poisoning (Altschul, *Real Lexicon*, 369) showed severe pains in the extremities, stiffness of the legs when walking, followed by diplopia, loss of memory, unconsciousness (this explains Hammond's success during the initial stage), and autopsies (Hughes, *l. c.*, 503) reveal the brain and spinal cord softened and infiltrated with blood. Hale (*Therapeutics*, 227) assigns Ergot a place in paraplegia from reflex irritation, *i. e.*, when anæmia of the cord is present and non-inflammatory softening is present. As we are also acquainted with the symptoms of raphania gangrænosa, so similar to senile gangrene, let us see whether Secale and Ergotin are not more homœopathic to paralysis agitans than to sclerosis, inasmuch as the softening and anæmia of the cord, with the passive stagnation of the blood in the veins, points rather to the former than to sclerosis.

Among the symptoms of Secale we read: "Weariness and great languor of the limbs; rigidity of limbs; the patients have great difficulty in moving their hands to their mouth; the fingers are bent backwards, the whole hand is drawn in, the forearms forming an acute angle with the upper arm and being directed to the chest, the tips of the remaining fingers somewhat curved and firmly drawn to each other. (Charcot, p. 180, describes a *similar* deformity for paralysis agitans, and warns on account of the pains for a mistake with arthritis deformans; the rigidity of the lower extremities is sometimes so exquisite, that one might think on paraplegia with contraction.) Difficult staggering gait; complete inability to walk, although the patient seemed stronger than he was, with a peculiar unfitness to perform light movements with the limbs and hands; contraction of the lower limbs, on which

account the patients stagger; trembling of the limbs; trembling of the limbs with pains; formication of the hands and feet; *excessive sensation of heat, with aversion to heat or of being covered.*

*Argentum nitricum.*—Charcot (*l. c.*, 198) says that in paralysis agitans it seemed to him that it increases the spasmodic state, whereas in multiple sclerosis it certainly causes a considerable improvement and lessens the intensity of the tremors. Hammond (*l. c.*, 514) found the Nitrate of Silver serviceable in several cases which were well advanced, but as he used it in combination with other remedies his testimony loses in value.

Is the depressing action of the cerebrospinal centres, produced by this salt, a primary or secondary action, as the experiments of Bogolowsky (*Practitioner*, July, 1869) give us rather a direct and primary influence upon the red corpuscles of the blood, causing their coloring matter to escape into the plasma, and so leading to interference with oxidation. Grauvogl considers it the true simile to defective oxidation of the blood, and considers it one of the chief remedies in his carbo-nitrogenous constitution.

Allen (*Encyclopædia*, i, 452) gives us the following symptoms hinting to sclerosis: "Vertigo, as if she were turning in a circle, inducing her to squat down, lest she should fall; vertigo and general debility of the limbs with trembling; vertigo and staggering gait; (160), transient blindness; (202), sunken, pale, bluish countenance; (625), cholera-like convulsive motion of the upper and lower extremities; (655), legs drawn up to abdomen by muscular contraction; (658), he vacillates when walking, feeling, moreover, extremely uncomfortable in the whole body and unsteady in his limbs; staggering gait; weariness of the legs; (720), excessive debility, tremulous weakness and apathy."

In several cases of posterior spinal sclerosis Hammond obtained amelioration by the use of *Phosphoric acid* or *Phosphorus*. French authorities also recommend *Oleum phosphoratum* and *Phosphathylamin joduratum*. Many allopathic authorities on *Materia Medica* throw Phosphorus among old lumber, and mention only some phosphates as fertilizer to the bones; we therefore can claim to have rescued it from its unmerited oblivion, and, as it has been often the case, toxicology led the way and showed how deeply it affected the circulation and disorganized the blood mass.

Still there is also a "phosphor paralysis," as described by Gallavardin (Hughes, *l. c.*, 449). Thus a man, immediately after inhaling the vapors of phosphorus, experienced a sensation of weakness in the back, as if he were ready to sink; then weakness of the extremities and *trembling at every effort*; creeping under the skin and a sensation as if something were starting under the epidermis. At first great sexual excitement, giving, finally, place to impotence; independent of that he found himself well. His legs were so weak that he could only walk a few steps, and even that he did with a *tottering gait, as if he was not sure of himself*; if he tried to stand upright his legs trembled and his knees bent; *his hands and arms trembled on making an effort; in the state of repose the muscles started out all over the body*, especially in the extremities; at times the twitching stopped, but it was easily excited by contact; the spine not sensitive, nor painful, but so weak that the patient cannot straighten himself nor remain standing when once straightened; *pronunciation embarrassed* (tremor linguæ).

Page 453, we read the conclusions of Mayer: Phosphorus acts specifically on the nerves of voluntary motion, and on the muscles themselves. It impedes, diminishes, and at last entirely destroys the power of movement, or rather it destroys the irritability of the motor nerves, and the contractility of the muscular fibres, and at last completely paralyzes the powers. It also acts specifically on the nerves of sensation, destroying sensibility from the periphery to the brain. Hempel cites one case where there was *amaurosis with widely dilated pupils and deafness*.

We could not have a more beautiful picture of sclerosis than this case of phosphorus poisoning. Hughes closes with these words: We must look upon Phosphorus as about the most important medicine we have for atonic states of the cranio-spinal axis and its issuing nerves. *When the cerebral hemispheres themselves are affected it appears to have no influence*. Hammond (*l. c.*, 510) shows that in posterior spinal sclerosis the lesion generally involves the posterior nerve-roots, the posterior white substance, and the posterior cornua of gray substance. Hence the cord loses both in the ability to transmit and to generate nervous force. The unconscious acts of muscular co-ordination can no longer be perfectly accomplished, and *the brain (hemispheres) is brought to*

assist in the determination through the sense of sight. Romberg (*l. c.*, 498) found in such cases atrophy of the cord, and the tissue of the muscles fatty, degenerated, and atrophied. Charcot (*l. c.*, 213) found in the first stage of sclerosis the interstices between the nerve-tubules (the neuroglia), consisting of an amorphous, soft, gray, finely granular mass, in which the neuroglia-granules of Virchow (the mycolocytes of Robin) were apparently suspended. (This explains how Arnold could mistake it for softening of the cord.) We have in fact an atrophy of the nerve-fibres now caused by hypertrophy of the neuroglia, and thus we find, during the later stages, in the periphery of a sclerotic focus, a considerable quantity of large and small granules, generally looking like fat-granules, which are fatty, degenerated neuroglia-cells. The final paralysis is easily explained, when we consider that the nerve-fibres are only represented by the axis-cylinder, all else having disappeared by compression.

*Calabar bean* has been tried in paralysis agitans, and even in sclerosis, by old-school physicians, and found wanting. Oh, how long will it still be till they cease mere experimenting, and try to cure according to the laws of nature! Hale (*l. c.*, 97) considers it a spinal remedy, and "the powerless parts are those which receive their nervous supply from the spinal cord and its nerves; 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;" hence it might be beneficial in sclerosis, but it does not cover the symptoms of paralysis agitans.

From its symptoms, as given by Hale (*Materia Medica*, i, 134), we emphasize: Dizziness in walking, it requires an effort of the will to keep from staggering; attacks of partial blindness, on attempting to write he was unable to see a line; nystagmus; trembling and convulsive agitation of the heart; pain ceases during rest, but commences again during motion, *but by continuing motion it is relieved* (this very symptom may perhaps explain its failure); muscular trembling in different degrees, from a mere tremor up to a jerking of the muscles.

Physostigma also needs more proving on the healthy, and the symptoms arrived at from cases cured by this drug ought to have been separated from genuine symptoms, or marked accordingly.

Paralysis Agitans.	Multiple Sclerosis.	Locomotor Ataxia, Sclerosis of the posterior columns.
<p>Living in a cold, damp atmosphere; depressing mental emotions; irritation of peripheral nerves, e.g., by trauma. Although not a senile disease, still oftener seen in advanced age.</p> <p>CAUSES:</p> <p>1. Tremor of extremities; whether voluntary movements are performed or not, the tremor continues during perfect quietude, but stops during sleep. <i>Tremor coccaus</i>.</p> <p>2. Propulsion or retropulsion, cannot keep his balance, but no vertigo and no tremor of the head.</p> <p>3. Head always free from tremors; still speech may be imperfect from tremor of the tongue.</p> <p>4. Rigidity in flexion, rendering all motion awkward; head inclined forwards on the neck; facial muscles and eyes set with an expression of mournfulness; upper extremities flexed, and position of fingers reminding one of arthritis deformans. Lower extremities rigid in half flexion.</p> <p>5. Habitual excessive sensation of heat, although temperature normal. Dynamic (not static) muscular contractions.</p> <p>6. The motor power is not weakened, but all voluntary movements are executed with a certain slowness.</p> <p>7. The disease is a <i>neurosis</i>, a permanent sensation of tension, of drawing in the muscles, and of prostration; constant desire to change position; a disease of long duration.</p>	<p>Peculiar to adolescence (14 to 25 years). Persons suffering from it hardly reach the age of forty; depressing emotions and struggle for life; effects of a cold and damp atmosphere. Prevalence of female sex according to Charcot.</p> <p>Specific rhythmical tremor only during the execution of certain voluntary movements, and ceasing when the muscles are in perfect quietude. Tremor a debilitate, attacking the head and neck as well as the extremities.</p> <p>Vertigo; everything turns in a circle; even the patient has the sensation as if he were turning round; the gait that of a drunken man.</p> <p>Cephalic form with diplopia, amblyopia, nystagmus; slow measured speech in syllables.</p> <p>Rigidity in extension or flexion with paresis. Peculiar expression of face, nearly idiotic, with mouth half open; loss of memory.</p> <p>Decrease of intellectual and emotional power; paresis of the extremities from a weakened state of the motor power, but hardly any decrease of sensibility.</p> <p>Sclerotic foci deep in the brain, in the spinal cord, and in the n. optici, oculomotor, and fifth pair.</p>	<p>Excessive sexual indulgence? excessive use of alcoholic beverages; undue mental exertion and anxiety. Prevalence of male sex (Hammond). Frequently no cause can be assigned for the disease.</p> <p>Perverted sensibility, hence inability to coordinate his muscles, and to execute with precision voluntary movements.</p> <p>No vertigo whatever; the gait abrupt, jerking, and exaggerated.</p> <p>Brain free; he cannot maintain the erect posture without looking at his feet, hence closing the eyes increases the motory disturbance, but no tremor.</p> <p>Cutaneous sensibility during first stage increased, then steadily decreasing.</p> <p>Sclerosis of the posterior columns. Affections of the brain towards the close, the result of defective nutrition.</p>

## General Record of Medical Science.

*Nota Sul Tifo, per Prof. S. Tomasi.*—Tomasi reports a peculiar form of typhus, which he observed this year at Naples, in the hospitals as well as in his private practice, characterized by slight localization and complication, but of long duration. The disease sets in with chills and sometimes with headache. During the first five or six days the fever is moderate, even in the evening not over  $38.5^{\circ}$ . As there is no fever sometimes in the morning, it might be mistaken for an intermittens. Between the fifth and sixth days the fever becomes continuous,  $40^{\circ}$  in the evening, or even more, and  $39.5^{\circ}$  in the morning. A slight splenic tumor, a very moderate adynamia, and frequently a slight diffuse bronchitis set in. The urine is of the same quality as in exanthematic typhus: Much uroxanthin, little uropheine, little phosphates, especially little magnesia. A slight meteorism may be rarely seen, still more rarely diarrhœa, very frequently constipation and loss of appetite, which is followed, even before the fever leaves, by a good appetite. Nervous symptoms are nearly entirely absent; the sensorium is free. The tongue is rarely dry; never fuliginous; mostly moist, and slightly coated. In one case some roseola was observed. *The fever remained for weeks at the same height.* The second period begins between the fortieth and fiftieth day with a decrease of the fever, evening  $39^{\circ}$ , morning  $38.5^{\circ}$  to  $38^{\circ}$ , and remains for a long time in such a state. Finally a third period of ten to twelve days follows, when the appetite returns and the patient feels well; no fever in the morning, but in the evening a temperature of  $38^{\circ}$  and some tenths; this afternoon fever usually begins between 1 and 3 P.M.

In some cases the maximum of the fever was in the morning, the minimum in the evening. A critical moisture on the skin has been observed in some cases.

Quinine rather aggravates, and he has never witnessed any benefit from it. Cool baths ( $22-23^{\circ}$  C.) repeatedly during the day, diminish for a short time the temperature. The diet ought to be restricted to three or four cups good beef tea and some spoonfuls of wine, especially where we meet a weak heart. —*Il Morgagni*, iii, 1875.

*On the Symptomatology of Diabetes, by Dr. J. Mayer of Carlsbad.*—We ask the question whether the polydipsia in diabetes arises from morbidly affected nervous influences, and in consequence of it, secondary polyuria, or whether the polyuria is the primary affection caused by vasomotory disturbances, and thus the cause of the polydipsia.

Vierordt, in his *Physiology of Man*, gives us the following conditions for the physiological sensation of thirst: 1. The objective stimulus to the nerves caused by the diminished quantity of water in the mucous membrane of the mouth and throat. 2. Irritation of those sensory nervous fibres which supply those parts of the mucous membrane causing the sensation of thirst (trigeminus, glossopharyngeus, and vagus). 3. Perception of the nervous irritation by the sensorium.



Romberg and Pribram record cases where the polydipsia might be taken as the primary affection, and, if we may accept polydipsia as the primary affection in many cases of diabetes insipidus, we see no reason why it should not be also accepted for many cases of diabetes mellitus. We know that the manifestations of polydipsia and polyuria often precede for months the melituria. Kuelz (*Beitraege Zum Diabetes Mellitus*, i, 126) mentions three cases where diabetes insipidus passed in melituria and *vice versa*.

By taking into account the mutual ætiological momenta which melituria as well as diabetes insipidus possess in psychopathy and neuropathy, in lesions of the cranium by a fall or by being struck on the head, in cerebral commotions, in severe colds, and finally in heredity, the conclusion may be easily taken, that in most cases the polydipsia is a manifestation totally independent of the quantity of the sugar in the blood, and that in many cases it might be taken as the primary affection.

But, on the contrary, we cannot deny that also in as many cases of diabetes the polyuria is the primary manifestation and the polydipsia the sequel. Burger (*Archiv. f. Klin. Med.*, xi, 323) considers the reduced perspiratio insensibilis, which we meet as well in diabetes insipidus as in mellitus, especially in weakened constitutions, as a proof for the primary polyuria, and Kuelz (*l. c.*, ii, 32) also concludes that in neglected and marastic diabetic patients, or after severe lesions of the medulla oblongata, in gregarious cerebral diseases, as soon as they produce an acute course of the diabetes, we must consider the polyuria as the consequence of the reduced perspiratio insensibilis. The physiological connection between morbid disturbances of the central organs and an increased secretory activity of the kidneys still needs a great deal of elucidation, but we find in the pathological manifestations of many organs, based on vasomotory irritations or palsies, analogues enough to accept also here vasomotory disturbances as the immediate cause.

Finally we have to consider the possibility that melituria and polyuria may be produced by one and the same noxa, and that they may appear together even at the beginning of the disease. When Claude Bernard made his piquûre in the centre, between the origin of the nervi vagi and acoustici, diabetes mellitus followed; with the piquûre of the medulla oblongata somewhat below the acoustici, polyuria took place without melituria. Energetically acting noxæ, more extensive lesions, may strike both these places at the same time, and we meet then a combination of melituria and polyuria.—*B. K. W.*, No. 22, 1875.

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*Experimental Researches on the Functions of the Brain*, by Professor Nothnagel.—1. When injuring a certain point on the surface of the cerebral hemispheres a disturbance of the muscular sense appears, lying in the rabbit two millimetres laterally from the median fissure and twelve to sixteen millimetres distant from the anterior end of the cerebrum after deduction of the so-called lobus olfactorius. By such a trauma the animals lose the faculty of judging the position of their extremities.

2. When injuring a certain point on the surface of the cerebral hemisphere, lying laterally and more anteriorly to the point given under No. 1, we find a paralysis of both extremities on the opposite side, or rather a deviation of

the extremities inwardly. In 1 and 2 the real centre of muscular innervation has not been touched, as the lesion is not permanent.

3. When injuring a certain point on the posterior end of the cerebrum spasmodic jumping movements set in. This point lies in the medullary point, and not, like the former two, in the gray substance. It cannot be strictly localized, but takes in all the white fibres around the top of the cornu ammonis. In successful cases the animals jump up immediately after the puncture and rush forwards with hurried leaps, in spite of all opposition. Sometimes they cry mournfully, whereas injuries of other cerebral points appear to be painless. A slight paralysis of the extremities of the opposite side remains for a few days and then passes off.

4. By injuring a narrowly circumscribed point in the corpus striatum, lying closely to its free border and nearly in the centre of an ideal longitudinal diameter running from the front backwards, we meet peculiar running motions, so that Nothnagel called this point the nodus cursorius. The animals do not survive this operation longer than eighteen hours.

5. When injuring a larger point in the corpus striatum, or any other point in it except the nodus cursorius, a paralysis of the extremities on the opposite side sets in, passing off after a few days, and running its course without any disturbance of sensibility.

6. An injury to the fornix has the same effect.

7. Traumata in the cornu ammonis cause no peculiar disturbance; the animals frequently perish from meningitis, and show many a time a stertorous respiration.

8. Injuries to the thalamus opticus cause paralysis of the opposite side of the body without anomalies of sensibility. Here we must consider the extent of the destruction. Very small foci at the surface turned to the ventricular cavity have no effect whatever. Where the destruction goes somewhat deeper a small and transient motory paralysis takes place. In sections, dividing the thalamus opticus from above downwards, we find: *a.* At the moment of division a transient movement of the animals towards the injured side. *b.* The hind extremity does not take part. *c.* Turning to the non-injured side.

9. Lesions of the nucleus lentiformis cause paralysis of the extremities on the opposite side of the body, and there is no difference what part of the nucleus lentiformis is injured. When the injury falls on the anterior or middle portion of the nucleus, we also find a lateral curvature of the spinal column, so that the convexity of the arch is towards the paralyzed side, the concavity towards the injured side. This paralysis lasts longer, sometimes nearly three weeks; no anæsthesia.

10. Destruction of both nuclei lentiformes causes a somnolent state, and death sets in on the second or third day.

11. Destruction of both nuclei lentiformes and of one or both nodi cursorius, lying in the corpus striatum, causes the cursory motions described sub. 4. The animals leap forward as soon as the nodus cursorius is touched; if coming to an obstacle, they hit against it and then remain in that position which they had at the moment of hitting it. Renewed movements ensue by irritating the skin. The cursory motions cease after twenty-four hours.

12. Destruction of both corpora striata in their totality also causes cursory movements.

13. Destruction of both nuclei lentiformes and of both corpora striata has the same effect as where the nuclei lentiformes are alone destroyed: apathy and a dreamy state.

14. Destruction of both thalami optici causes in the extremities a disturbance of the muscular sense. The animals perish after eight to fourteen days, and during this whole time this disturbance continues. Motory disturbances and anomalies of sensibility are not present.

15. Destruction of both corpora striata and of both thalami optici cause cursory movements, when the nodus cursorius was hit; if this remained uninjured, we only find disturbances of the muscular sense, as when both thalami optici are alone destroyed.

These experiments finally prove that lesions of the thalami optici in their totality neither produce motory paralysis nor anæsthesia, as some authors declared.—*D. Z. f. Pract. Med.*, 24, 1875. (*Extracts from Virchow's Archives*, vols. lvii–lxii.)

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*What is Diabetes Mellitus?*—Dr. A. Düring considers the essence of this disease to be a peculiar disturbance of the digestion, with excessive acidity, and affirms that every gastric catarrh, by which the activity of the plexus solaris becomes altered, may produce diabetes mellitus. The general disturbance of nutrition, found in diabetic patients, does not find its cause in the inimical influence of the abnormally increased sugar circulating in the blood, but rather in a deficient and qualitatively changed chymification caused by the disturbance of digestion. Just as man does not live from what he eats, but from what he digests, thus also the diabetic patient does not produce sugar from what he eats, but from what he does not digest. Another factor for diabetes is, that every noxa by which carbonic acid is introduced into the blood, or retained therein by obstacles of the respiratory process, may produce sugar in the organism under favorable circumstances. He fully opposes the total exclusion of farinaceous food as useless, and in his dietary regimen he rather favors their use. His chief reliance is to aid by every means the excretions from the lungs and skin. *Fresh air is the remedy*, every day walking out, the windows open at night, in fact to live as much as possible in the fresh air. In order to rouse up the inactivity of the skin, cold packs morning and evening for an hour or two, but with open windows and well covered. When stormy weather prevents outdoor exercise, gymnastics suitable to the house must be indulged in. He never uses internal medication, and still he has cured forty-six out of eighty-nine patients fully, and of twenty-four who left his house improved, later reports are wanting. At any rate, the results of this hygienic treatment are very encouraging, especially in a disease which hitherto allowed mostly only a bad prognosis.—*Wien. Med. Presse*, 19, 1875.

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*Diagnosis and Treatment of Dropsy from Heart Disease without Valvular Disease*, by Dr. H. Seiler.—*Symptoms*. A high-graded hydrops; more or less severe dyspnœa; small, nearly always arrhythmic pulse, whose frequency can

hardly be counted; in most cases chronic nephritis with albumen and some cylinders; heart of normal size, or slightly enlarged in breadth, sounds clear; liver hypertrophied; great atony of digestion. The most frequent cause of such a complex is fatty degeneration of the cardiac muscle, although we may also think on pericardial adhesions, subpericardial proliferation of the fatty tissue with intact muscles, or on a pure neurosis of motility. It might be mistaken for a primary chronic parenchymatous nephritis. But the nearly always arhythmic pulse, so characteristic of fatty degeneration of the heart, the presence of the dyspnoea a long time preceding the hydrops, and the anamnesis must be our guides. Valvular diseases are easily distinguished from simple fatty degeneration. The treatment consists in infusum Digitalis, in order to increase the energy of the heart's action, and even a fliform pulse is no contraindication, but rather an indication for its energetic use. Some easily digestible preparation of iron should be given in combination with the Digitalis, and continued for some length of time, as only thus a cure may be possible.—*D. Archiv. f. Klin. Med.*, xv, 2.

*On the Structure of the Mucous Membrane of the Uterus, and its Periodical Changes, by Professor Bischoff.*—Dr. John Williams, of London, publishes in the *London Obstetrical Journal* an essay, wherein he gives his observations on twelve cases during the menstrual period, and he found that the period of menstrual bloody discharge is really the period of detrition and fatty degeneration of the uterine mucous membrane. But immediately after cessation of the bloody discharge its regeneration begins, and progresses steadily onward up to the end of the menstrual interval. At that time the retrograde metamorphosis and degeneration sets in, and with it the flow; but this destruction of the uterine mucous membrane is limited to the time of the flow, and passes immediately over into the stage of regeneration.

Thus we more easily comprehend the well-known relations of ovulation and fecundation. During the time that the uterine mucous membrane is cast off and bleeds, the follicle ripens in the ovary, and *the ovum passes into the Fallopian tube*, and as it passes only very slowly through the tube, time is thus given to the uterine mucous membrane for regeneration. When at that time an embrace takes place and the ovum fecundated, it finds the inner surface of the uterus perfectly developed again for its habitation, and pregnancy takes place. Where the ovum fails to be fecundated, it perishes; still the uterine mucous membrane runs through its process of regeneration to the end of the menstrual interval, to pass again into its retrograde process and bloody discharge.

The uterus is then at no time in a state of perfect quiescence. Either in a state of evolution of its internal surface, which lasts about three weeks, or in a state of involution, lasting a week. Aveling calls these two stages "*Nidation*" and "*Denidation*." Only during the period of involution (denidation and bleeding) is, *in relation to the uterus*, fecundation and fixation of the ovum possible. During the whole period of evolution, fecundation and fixation of the ovum might take place as far as it relates to the uterus; but the question arises, whether the ovum, in the later stages of evolution and *in the uterus*, is

still capable to be fecundated. Experience among the mammalia rather speaks against it. It is most probable that the ovum, during its passage through the Fallopian tube, must receive from the semen the impulse for further development; in the uterus it has run the course of its molecular motion, which must be increased and individualized by the semen, if further development should take place. We do not know whether success is possible of observing the period of transit of the human ovum through the Fallopian tube. Only during this transit fecundation is possible, and even if it should last three weeks, conception would be possible during the entire intermenstrual period, and only impossible during the period of ovulation and denudation in the uterus. The acts are far from being closed, and we cannot deny the possibility that there may also be an intermenstrual period during which fecundation is impossible.—*W. M. Wochschr.*, 24, 1875.

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*Primary Circumscribed Purulent Arachnitis with Atactic Aphasia.*—Professor Luizkiewicz was consulted by a man of 30, on account of an obstinate eczema of the scalp with simultaneous psoriasis. Anamnesis showed that the patient had a chancre six years ago, which was rapidly cured by mercury. Soon afterwards psoriasis set in, which repeatedly returned in spite of treatment. Finally, an inunction cure drove it away for two years; then it returned all over the body worse than ever. Inunction was again applied, and on the twenty-fourth day of the treatment the patient suffered from a carious tooth, which was extracted. Half an hour afterwards a chill set in, and on the following day another chill was followed by fever. On the second day another chill in the morning, followed by some headache, which towards midnight became continuous, fixed over the left parietal bone. On the fourth day the pain kept on, and the patient used wrong words; only the first word of a sentence is rightly pronounced, all the others are unintelligible; the temperature very high. This aphasia continued in an aggravated form the next day. No disturbance of motility. Towards evening renewed chills, and death during the night. Autopsy revealed the left middle lobe of the brain in its whole extent, not far from the basis, adherent to the dura; after separating the adhesions, discharge of about three ounces yellow creamy pus. The affected part of the brain compressed by the accumulation of pus, leaving after its discharge a deep indentation. The tentorium cerebelli covered with pus, also the lower surface of the posterior lobes.—*Rundschau*, I, 1875.

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*A New Treatment for the Obstinate Vomiting of Pregnant Women.*—In all cases of obstinate vomiting of pregnant women, where the induction of artificial labor seems indicated, Copeman stopped the vomiting and carried his cases to the end of the term by forcible dilatation of the os uteri with the finger, and by carefully smoothing the edges. Amelioration immediately follows this gentle operation.—*Brit. Med. Jour.*, May, 1875.

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*Pulmonary Syphilis, by Dr. Grandidier.*—The diagnosis of pulmonary syphilis is only possible by close attention to the physical and functional symptoms.

In relation to the former we meet different conditions, according as the disease appears, as pulmonary induration (gummos neoplasma, chronic pneumonia), or where already a process of softening and detrition, with formation of cavities (phthisis pulmonum syphilitica) had set in. As characteristic symptoms may be mentioned: remarkable dulness in percussion of the right middle lobe, corresponding to the regio intrascapularis to the middle of the base of the right scapula. This dulness is the most extensive in the region of the hilus of the lung, and gradually passes off upwards, downwards, and laterally. During the stage of interstitial pneumonia the apex and base of the lung are always free; after awhile a dulness is observed anteriorly between the second and third intercostal space, close to the sternum. The left lung is only rarely affected. Respiratory murmurs are absent in these dull places; sometimes even bronchial breathing can be observed; whereas, at the lower angle of the right scapula weakened respiratory murmurs are heard, and we observe the respiratory murmurs in the lower lobe of the right lung clear and normal. *This induration, limited to the middle right lobe, is characteristic for syphilitic pulmonary affection*, and is an important differential phenomenon to distinguish it from pulmonary infiltration by tuberculous or cheesy pneumonia. Michaelis confirms this statement, that phthisis syphilitica is hardly ever found at the apex of the lung.

Functional symptoms of syphilitic pulmonary disease are: Great dyspnoea in going up stairs or ascending hills, pain in the right lung when taking a deep breath or during percussion, mostly a dry cough, sometimes copious expectoration mixed with blood; no fever whatever. Anamnesis is important, as also the coincidence and succedence of other manifestations of constitutional syphilis, with absence of all signs of hereditary or acquired pulmonary phthisis or of former pneumoniæ. Coincident symptoms were mostly syphilitides of the skin, bones, mucous membranes, in some cases gummata of the tongue, and symptoms of visceral syphilis of the liver and brain. The liver, the spleen, or both, were frequently found in a swollen condition.

A syphilitic patient may become tuberculous, and a patient suffering from phthisis catch syphilis. Here the seat of the induration in the middle right lobe, the absence of any hereditary disposition to phthisis, the absence of any suspicious formation of the thorax, and that pneumonia did not precede this diseased condition, will keep us from errors. The successful treatment confirms the diagnosis. Grandidier cures his patients at Neundorf with drinking, bathing, and inhaling the waters of that celebrated spring, in order to have the blood impregnated with sulphuretted hydrogen. He uses at the same time Kali hydrojodicum, more rarely mercurials. He advises the use of that water also at home for some time, and thus comes to the opinion that *the diagnosis of syphilis pulmonum is possible, and that this disease in its earlier stages, and when not complicated with tuberculosis, or with other degenerations of the pulmonary tissue, allows a more favorable prognosis, even a cure.*

*All. Med. Centralzeitung*, June, 1875 — Neundorf (Hessia), contains solids 28.8; CaCO<sub>3</sub>, 11.8; Na<sub>2</sub>SO<sub>4</sub>, 3.5; MgSO<sub>4</sub>, 7.4; CaSO<sub>4</sub>, 4.3; MgCl<sub>2</sub>, 1.5; H<sub>2</sub>S, a trace. *Vide* Walton, *Mineral Springs of the United States and Canada*, p. 354 and p. 209, where he compares Avon Springs, New York, with it.

*Nervous Symptoms of Diabetes, by Professor Bouchardat.*—1. *Partial anæsthesia* More frequent than is generally supposed; he has observed it in the lower limbs, the thorax, and the face. 2. *Cramps*. They occur oftener during the night, and are usually confined to the lower limbs; they disappear generally with improved regimen and exercise. 3. *Insomnia*. Caused chiefly by the frequent necessity for micturition, and in a great measure relieved when that necessity is removed. Exercise should be insisted on in the treatment of this condition, and an interval of some hours should intervene between supper and bedtime. 4. *Neuralgic pains* in the region of the kidneys; sometimes they are felt in the dorsal region, more rarely in the lower limbs and articulations; sometimes a feeling of numbness is complained of in the legs, of chills or burning heat in the extremities. 5. *Weakness of memory* is very frequent in diabetic patients past the meridian of life. This is not the usual senile weakness, but progresses much more rapidly, the ratio between them being as one to ten, and the faculties usually return with the disappearance of the other troublesome symptoms. There needs, however, a very guarded prognosis on this point. 6. *Inability for mental labor* is usually observed, and improvement usually occurs with improvement in the other symptoms. In many cases a recklessness and want of care is observed to an astonishing degree; an irresistible desire for sleep is often observed after dinner. 7. *Irascibility* is frequent, especially in male patients, and it seems to have a tendency to increase the amount of sugar in the urine. 8. *Melancholia and hypochondria*. Cases of long standing, especially in males, are accompanied with low spirits and melancholia, a kind of low hypochondria. This is due in part to the habit of idleness that the disease often produces, in part to the premature impotence of the patient, and lastly to the feeling of being afflicted with an incurable disease.—*Chicago Journal of Nervous and Mental Diseases*, July, 1875.

*Diagnosis of Acute Tuberculosis, by Dr. Bouchut.*—The diagnosis of hasty consumption is very difficult in the first days of its existence, and it may be mistaken for a typhus. Bouchut believes that a *certain persistent hyperæsthesia of the walls of the thorax and the proof of choroideal tubercles* render a clear diagnosis certain. Such a hyperæsthesia thoracica belongs only to acute tuberculosis, and has never been observed in typhus. The touch of the thorax with the fingers is extremely painful and percussion impossible. In typhus the hyperæsthesia may extend over the whole cutis, the thorax as well as the extremities, and is therefore of no great import. In meningitis tuberculosa the hyperæsthesia is also total, and not a partial one. Should we therefore find in a patient a hyperæsthesia thoracica unconnected with hyperæsthesia of other parts of the body, we may conclude that the disease is pleuritis sicca and tuberculosis pulmonum acuta.—*Gaz. des Hôp.*, June, 1875.

*Copaiba as a Diuretic, by Dr. E. L. Dixon.*—Copaiba is a diuretic of considerable value. In a case of ascites the patient was ordered to take three capsules night and morning. Three days afterwards the urine was found to

have increased from 14½ to 65 ounces in twenty-four hours. The ascites rapidly diminished until in six days no fluid could be detected; the vertical dulness of the liver was six inches. In another case of albuminuria from heart disease the albumen nearly disappeared with the ascites and œdema.—*Practitioner*, February, 1875.

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*A Study on the Tumors of the Fourth Ventricle.* Paris, 1875.—Dr. A. Verron collected twenty cases of tumors, which developed themselves either in the plexus choroideus or in the ependyma of the fourth ventricle, and excluded all which originated in the cerebellum or medulla oblongata, and from there extended into the ventricle. In relation to sensibility the most frequent symptom is severe headache; other sensory disturbances are rare. Only once he met bilateral facial neuralgia, and twice unilateral decrease of sensibility coincident with hemiplegia.

Motory disturbances are nearly always present. He observed in three cases insecurity in walking, even to such a degree that the patient could not keep himself erect. In one case the patient tottered as if intoxicated; in three other cases disturbances of co-ordination were present; twice he met imperfect hemiplegia, once with facial paralysis on the same side, and in another case on the other side of the face. Contractions or epileptic fits are rare, but attacks of petit mal frequent, especially in the beginning of the disease. Intellectual disturbance was only noticed in about half the cases. The urine was examined in ten cases: four times polyuria and sugar was found; twice only polyuria, and in four cases the urine was normal. Vomiting is rarely absent. Amaurosis is nearly a constant symptom; after a certain time always on both eyes, although it may at first affect only one eye, but combined with other unilateral affections,—hemiplegia, facial paralysis, deafness; four times facial paralysis was present; twice, dysphagia; five times, strabismus; four times, deafness; and twice, difficulty of speech. Sometimes respiratory disturbances set in; once a singultus appeared, lasting for three weeks. Irregularities of circulation have also been observed. Death may suddenly set in without a preceding aggravation.

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*On Exhausting Vomiting of Pregnancy, by Dr. Cohnstein.*—The etiology of this affection is not yet sufficiently clear, although sometimes autopsies may have revealed some pathologico-anatomical changes in the walls of the stomach, still in most cases only an extensive anæmia is found. As the cause of spontaneous abortus, the vomiting and its influence on the uterus may be considered, with the increased pressure on the aortal system towards the end of the vomiting, which favors a tearing up of the connections of the ovum. As artificial abortus is only exceptionally indicated, and no remedy promises a certainty in producing spontaneous expulsion of the fœtus, we must look for some other means of treatment. Inasmuch as the vomiting only sets in when food is taken by the mouth, and thus an irritation of the terminal branches of the vagus in the gastric mucous membrane produced, and inasmuch as the prognosis is not an unfavorable one when the affection is left to



itself, and frequently amelioration sets in during the progress of pregnancy, and inasmuch as death mostly threatens from inanition, the indication seems clear to us, *to nourish the body per anum*, and no food whatever must be taken per os. Nourishing injection will support life for months. He recommends injections of a mixture of finely hashed meat and finely bruised pancreatic substance into the anus, which is at first cleansed out by injection of water. Cases thus successfully treated, and the infants born at term, are given by the Doctor.—*Arch. f. Gynecol.*, vi, 2.

*A Surgical Nail, by Dr. Motais.*—Dr. Motais laid before the Société de Chirurgie, at Paris, his newly invented surgical nail, consisting of a steel plate, which covers the nail of the finger, and is attached to the finger by a ring fitting close to the base of the nail-phalanx. It may be used for extraction of tumors in pharynx and uterus, and for scooping and scratching out processes; it has the advantage of leaving perfectly free the touching surface of the point of the finger.—*Wien Med. Presse*, 22, 1875.

*Analogies between Luxations of the Shoulder and Hip-joint, and their Methods of Reposition, by Dr. Th. Kocher.*—Whereas for the position of the luxated thigh the lig. ilio-femorale is the chief factor, which must be especially taken into account during reposition, we find on the shoulder a ligament of analogous importance, the lig. coraco-humoralis.

Luxations forwards and upwards, L. subcoracoidea analogous to L. ilio-pubica; luxation forwards and downwards, L. axillaris, analogous to L. obturatoria; luxation backwards and downwards, L. infraspinata, analogous to L. ischiadica; luxation backwards and upwards, L. subacromialis, analogous to L. iliaca.

Reposition in luxations, forwards and upwards, is executed first by supination, then by flexion, finally by rotation and extension. In old cases hyper-extension precedes all these movements. In luxations forwards and downwards we begin with flexion (abduction in the arm) and traction, followed by rotation outwards, and finally with extension and pronation. The luxations downwards and backwards are reduced, like those downwards and forwards, by outward rotation, which precedes flexion, only a stronger pronation must precede it. The luxations backwards and upwards are reduced, after strong inward rotation and traction is executed, in the position of flexion, when by rotation outwards the luxation is reduced. These methods of elevation-rotation need no very considerable power, and in fresh and regular cases can be successfully executed without narcosis, as there is too much abuse of anæsthetics.—*Volkman's Klin. Vorträge*, 84.

*Progressive Pernicious Anæmia, by Professor Biermer.*—Biermer finds no sufficient etiological cause for this fatal disease, nor anatomically a corresponding degree of disappearance of the fat, nor any other symptom of marasmus; in all cases the anæmia is of such severity as is only seen in persons who died from excessive loss of blood, and though every hygienic, dietetic, and medicinal care is bestowed on the patient, the disease leads invariably to

death. It cannot be mistaken for other processes leading to high-graded anæmia, neither with chlorosis, for we do not meet the stenosis of the aortal system, mentioned by Virchow, nor with acute albuminuria, as the examination of the urine contradicts this; nor can this anæmia be identified with the secondary anæmia after leucæmia and morbus Addisonii. This progressive pernicious anæmia is a true oligæmia and oligokytæmia with hyperinosis, finally a hydræmia; the white corpuscles are only relatively increased, and even this is not constant. In all cases loud systolic murmurs could be heard, which were not caused by valvular disease, but from the want of blood, and perhaps by the changes in the muscles of the heart, especially of the papillary ones, to which Ponfick first led our attention. A very characteristic complication are hæmorrhages of the retina, perhaps produced by the fragility of the retinal capillaries, but finally by the abnormal composition of the blood, which also deteriorates the power of resistance in the capillaries. In autopsies, partial fatty degeneration of the cardiac muscles and of the interna of the arteries (Ponfick's anæmic form of the fatty heart), was always observed. Ponfick also mentions the fatty metamorphosis of the renal epithelia, of the hepatic cells, and of the funnel-shaped glands (Schlauchdrüsen) of the stomach. The fever accompanying this pernicious anæmia may be explained from the poverty of the blood. Biermer's fifteen cases were all women between twenty and forty, and Gusserow's cases happened during pregnancy.—*Deut. Arch. f. Klin. Med.*, 1810, 3.

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*Carcinoma*, by Professor Waldeyer.—Waldeyer considers mammary cancer an *atypic epithelial proliferation*; the process may emanate from a place where physiologically epithelia are present (epithelium of the glands, of the lymphatics, external skin). In carcinoma simplex epithelial proliferation and connective-tissue production go *pari passu*; where the former is too slow the latter prevails and *carcinoma fibrosum* (scirrhus of the ancients) develops itself; where the reverse takes place we meet the *carcinoma medullare*, and where the epithelial cells pass quickly into colloid degeneration we find the *carcinoma gelatinosum*. At first decidedly local, the disease begins to migrate after awhile, especially along the course of the lymphatics, which, not at first, but by and by, take on a morbid action. In most cases the migratory cells remain in the adjacent group of lymphatic glands, but, as soon as the cancer-cells pass into the ductus thoracicus, the whole body becomes infected; in many cases the connection between the primary mammary cancer and the secondary affection of the liver and bones has not been cleared up.—Schmidt, *Jahrb.*, 12, 1874.

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*Pilocarpin*.—A. W. Gerrard succeeded in producing the alkaloid of jaborandi as a nitrate and chlorate; he calls it Pilocarpin. 0.03 grammes gave the full physiological action of jaborandi.—*Pharm. J.*, June, 1875.

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*Intestinal Hæmorrhage*, by Dr. M. Peter.—Intestinal hæmorrhage in typhoid fever is a favorable symptom when it takes place at the beginning of the dis-

ease, *i. e.*, during the period of congestion, where it is a critical phenomenon. a means of derivation; but it is unfavorable when too much blood is lost at any time, and especially intestinal hæmorrhage is to be feared at the end of the second week, a period when the patient has nearly used up his organic resources, and the prognosis becomes nearly fatal when it coincides with hæmorrhages from the nostrils, gums, skin, etc.—*Gaz. des Hôpitaux*, 1875.

*Operation for the removal of a Large Echinococcus.*—A man of 20 years had in the right abdominal region a tumor of the size of a child's head, which developed itself for the last four years. Severe pains followed a diagnostic puncture, but they soon passed off. Three months afterward, Dr. H. Maas operated according to the method of Simon. Two thin trocars were introduced into the sac at a distance of four centimetres, but the discharge of its contents prevented. The small quantity of fluid which still showed itself was turbid and purulent, whereas the trial puncture only gave a clear fluid. Most probably the explorative trocar had not been disinfected. After four days the punctures were united by an incision, and the sac washed out with a strong solution of carbolic acid. The echinococcus cyst was extracted with the finger. The remaining cavity had smooth walls, only in the muscles at the symphysis sacroiliaca were irregular indentations. A drainage-tube was put in, and Lister's bandage applied. No fever followed and only a slight seropurulent discharge. After three weeks the patient was discharged, cured.—*Deut. Klinik*, 1, 1875.

*Diabetes Mellitus and Insipidus, by Dr. Kuly. Marburg, 1875.*—In all his experiments the author never succeeded to find albumen or inosite in the urine. It is well known that for years a peculiar kind of sugar, the inosite, which is closely related to grape or urine-sugar, has been detected in the muscles and in some parenchymatous organs, and it was to be expected to find it also in diabetic urine, but all experiments show that at any rate neither albumen nor inosite form a constant part of diabetic urine.

Neither the saliva nor the tears contain in diabetic patients a trace of sugar. Two cases of diabetes insipidus deserve our particular attention. An hysterical young woman complained for three years of a profuse salivation, the quantity of urine being normal. In order to increase micturition and to reduce salivation, she was ordered to take Kali aceticum. But this drug increased both excretions at a fearful rate, and when after three weeks she stopped the treatment, it was found that the poor girl had acquired a lasting polyuria, which was only removed by the steady application of the constant current, applied either to the vertebral column, or in the region of the cervical sympatheticus.

There is certainly a close connection between excessive excretion of urine and ptyalism. Bernard has shown that melituria arises after the lesion of a certain point at the fourth ventricle, and a lesion of a point near by produces polyuria. Eckhard's experiments on dogs and rabbits proved that with the polyuria increased secretion of saliva is also observed. Noellner then showed that after a unilateral lesion on the floor of the fourth ventricle, the

secretion of saliva increases in both submaxillary glands, but only in the parietes of the injured side. Grützner observed excessive ptyalism from irritation of the medulla oblongata. Hence the centre for the salivary secretion appears to be on the floor of the fourth ventricle. Diabetes insipidus finds also its centre in the same region, and we need not wonder therefore to find this disease associated with ptyalism. For both diseases the constant current will always remain a most important remedy.

Dr. Engelmann elaborated the chapter on perspiratio insensibilis in melituria, and came to the conclusion that it is never found at a lower rate than in the normal state, as long as the patients are kept well nourished; and he never detected that more water appears in the urine than the patient drank, without the patient also loses in weight correspondingly.

Dr. Bishop worked out the third and fourth chapter, and found in his experiments with diabetic patients, that mere gargling with solutions of sugar does not increase the quantity of sugar in the urine, whereas the same quantity swallowed always reappears in the urine. The reason is still unknown why in the one case the sugar is burnt up and used up by the organism, and in the other case it is discharged without being used. He found in methyl-delphinine a drug possessing the physiological effects of curare, and alike also the quality of causing diabetes mellitus in frogs. He agrees with Luchsinger and Salomon (chap. v), that the sugar which is absorbed in the intestinal canal, changes to glycogene in the liver, in order to form again sugar from the glycogene, and as such enters the circulation.

The therapeutical part contains nothing new; but he brings forward some cases where the patients recovered without having taken any medicine.

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*Salicyl Acid, by W. Kolbe, M.D.*—Only the free Salicyl acid, but not the isomeric acids (Paroxybenzoic acid and Oxybenzoic acid), nor the salts and ether of Salicyl acid, nor the chemically related combinations, as Saligenin, Salicylic acid, and Salicin, acts antiseptically. It has no smell nor taste; can be taken internally in pretty large doses without any injury to the general state of health. It keeps water for years from becoming stagnant and foul. (The Doctor is now making experiments, how long water can be kept good with the smallest quantity of Salicyl acid.) Our surgeons use it now frequently, instead of Carbolic acid, for the same purpose. It is, in very small quantities, one of the best preservatives for the teeth, and to sweeten the breath. Of equal benefit is it in the removal of that foul perspiration of the feet, as it prevents the formation of butyric acid, valerianic acid, and other related acids which corrode the feet without suppressing the perspiration. A powder may be prepared from Salicyl acid, talc, pulverized soap, and amyllum, which, applied to the feet, removes every vestige of bad odor, and gives them a pleasant softness. Since July, 1874, it took the place of Carbolic acid in the lying-in asylum of Leipzig, and is used with perfect satisfaction for the disinfection of the hands, for vaginal douches, for ulcera puerperalia, etc., in solutions of 1:300 to 1:900, or, as powder, mixed with amyllum in proportion of 1:6. Whether its internal use in zymotic diseases, in ichorrhæmia, in venomous bites, etc., will lead to good results, is still unknown.

He made provings with Salicyl acid on himself and eight medical friends. He prepared a solution of 5 grammes Salicyl acid, 95 grammes Spiritus vini, 140 grammes water, and 60 grammes Syr. cort. aurant., of which each took the first day 1 gramme, the second day 1.25 grammes, so that they consumed together about 20 grammes of the acid, and he reasons therefrom, that in daily doses of 1-1.5, it produces no change in the normal state of health. It is best prescribed as an emulsion, as in the form of powder it acts as a weak caustic on the mucous membrane of the mouth, œsophagus, and stomach. (R. Acid salicyl, gramme i; Ol. amygd. dulc., grammes xx; Gummi arab., grammes xi; adde Aqua flor. aurant., grammes xliiv; Syr. amygdal., grammes xxv.) On account of its antiseptic qualities, such an emulsion will keep for weeks. Experiments also show that it is not absorbed through the epidermis.—*Med. Cent. Zeitung*, 15, 1875.

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*On the Antipyretic Action of Salicyl Acid.*—Dr. Butt, of St. Gallen, affirms that even larger doses are not poisonous, and that it is an excellent antipyreticum, equalling Chin. sulph.; he never saw collapse, or symptoms of intoxication from it. According to the severity of the fever, he gives at once a dose of 4.0 to 8.0, and witnessed excellent results in abdominal typhus, erysipelas, rheumatism, etc., etc.

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*A Case of Chloroform Narcosis resuscitated by Nélaton's Method.*—Dr. M. H. Jordan, of Birmingham, Alabama, reports (*American Practitioner*, February, 1875) the following case:

Miss —, aged eighteen years, stout, of full habit, and seeming to be in perfect health, applied to Dr. Eubank, a dentist of this place, to extract a tooth. She was accompanied by Dr. F. D. Nabors, and concluding that she could not undergo the operation without chloroform, this, after some solicitation, was administered by Dr. N. on a napkin. After four or five inhalations, some spasmodic movements of the face being observed, the napkin was removed, and the patient directed to open her mouth, which she did, when the tooth was extracted without pain. No indications of a return of consciousness being observed, and the pulse being found excessively small and feeble, and it along with the breathing soon ceasing to be perceptible, the patient was quickly placed prone on a bed, and Dr. I. W. Sears and myself sent for. Dr. S. arrived a few minutes before me, and finding the jaws tightly closed, he forcibly opened them with the handle of a spoon, and pulled the tongue, which had fallen back upon the fauces, well forward. When I reached the scene the young lady was apparently dead. There was complete relaxation of the entire muscular system; the lips, face, and hands were livid; breathing and pulse had ceased. Having in mind the experience of Dr. Marion Sims in a case in many respects similar (see *Am. Journ. of Med. Sci.*, October, 1874, p. 570), we immediately inverted the patient's body, the head hanging down, while the feet were raised high in the air by Dr. Eubank, both legs resting over his right shoulder; Dr. Nabors supported the thorax; Dr. Sears kept the jaws open and managed the tongue; while I made efforts at artificial respiration by alternately pressing on the thorax and abdomen. After anxiously waiting

for about five minutes for some indications of returning vitality, we were overjoyed at seeing one feeble attempt at respiration, followed after a long and painful interval by another, which gradually became fuller and more frequent, accompanied by a return of the pulse, until we concluded that it was safe to place her back in bed. Imagine our distress to find that as soon as she was put in the horizontal position the breathing again ceased and the pulse disappeared, and she looked again the very picture of death. She was again and instantly placed as before, so as to invite the blood to gravitate a second time to the brain, while efforts at artificial respiration were briskly kept up.

After a prolonged and most anxious interval we were again delighted by hearing a feeble spasmodic gasp, followed after another protracted interval by a second, then a third, etc., until the breathing finally became natural and the pulse returned. We laid her on the bed a second time, confident that it was now safe; but shortly after resuming the horizontal position there followed a spasmodic twitching of the muscles over the entire body, with a decided inclination to fall into a heavy sleep. Finding it difficult to keep her awake by mild means, we made stimulating applications along the entire spine, and put her feet into hot (almost scalding) water, which roused her sufficiently to make further treatment unnecessary. After anxiously watching and working with this patient for one hour and a half, we were rewarded by seeing her restored to life, and at the expiration of four hours finding her able to ride to her home, a distance of five miles.

I feel that I am simply stating a reasonable conclusion when I say that the life of this young woman was saved by practicing the method of M. Nélaton, and I do not believe that she could have been resuscitated by any other.

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### Reviews and Bibliographical Notices.

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*Materia Medica and Special Therapeutics of the New Remedies*, by E. M. Hale, M.D., two volumes. Boericke & Tafel, 1875.—“Fiat Justitia, ruat cælum,” so says the reviewer of the *Observer*, and every candid mind will agree to the truth of this sentence, but justice also requires coolness and reflection. In the English navy there is a good rule, that no delinquent can be punished till twenty-four hours have passed, and the reason thereof is plain; punishment should never be meted out when we are in a rage.

Is Carl Müller a German? The name sounds rather German, but the phlegmatic German is cool as an observer, and a German reviewer might flagellate a work unmercifully, might even show piracy, but personalities ought never be allowed to take the place of even caustic criticism.

There is another reviewer of the *Observer* who is an honor to any journal. The physician who reviewed Allen's *Encyclopædia of Pure Materia Medica* (April, 1875) shows that a work can be severely handled, praised whenever praise is deserved, and still its faults shown in a kindly and fraternal feeling. There is no man better able to review our literature, for there are few better instructed, than Prof. S. A. Jones, of Michigan; and we hope that,

as he did in Allen's work, he will expose everywhere all omissions as well as commissions, in order that they may be rectified in further editions. An author has not only no right to object to such criticism, but rather he ought to be thankful for the labors which his confrères bestow on his work, and in most cases this gratitude will be freely bestowed by the author.

Jahr, Noack and Trinks, Lippe, Granier in his *Homœolexique*, Henry Buck in his *Outlines of Materia Medica*, Dudgeon in his *Pathogenetic Cyclopædia*, and perhaps some authors of less repute, have all committed the same crime for which Hale is put on the pillory by Carl Müller, and what is the crime? The symptoms do not bear its mint-mark, and this omission is a cardinal violation of the purity which our Homœopathic Materia Medica must possess in order to merit the confidence of the practitioner.

Here I would ask Carl Müller as well as Dr. Hale, who shall be the sole, quasi autocratic judge of the value of a prover? Is Hahnemann's "Ng." reliable? Some deny his reliability, and still many of his symptoms stood the test of practice and performed cures. Is Nunez, the great Spanish scholar and Hahnemannian in the strictest sense, reliable? No, a thousand times no! So says E. M. Hale, M.D. (vide vol. i of *New Remedies*, p. 615). Houatt is also proscribed as unreliable and not worth confidence by an author, who swallows the Eclectics by wholesale, and takes the symptoms of buckwheat (which beat Houatt's symptoms in magnitude and breadth), in full, because they are given by a few students. Professor Hoyne just now attacks Hale's proving of Iberis as false. Hering gives us the names of Arabs in his provings, and what do we know, even to-day, of the names of those mentioned by Hahnemann? But "names," cries Carl Müller, the mint-mark, as if a dollar would be anything else but a dollar, whether stamped with the Philadelphia or New Orleans mark; and then, "most noble Carl," even that mint-mark might be counterfeited. It would have been far better for Dr. Hale if he would not have known the author of the provings of Robinia, of Tarantula, and others, for Hale is easily biassed, and then his judgment is not reliable, although the symptoms of these remedies are as reliable as those vouchsafed as true by Hale. Allen is perfectly right in accepting all proved symptoms, and leaving it to the reader to judge about their merits.

At any rate there must be some good points in the work of Hale, for even Carl Müller advises, "so many as do not possess the *New Remedies* will do well to get this volume, despite this great defect." It supplies for the indigenous and lately proved remedies the same honorable place which Lippe's *Text-book* enjoyed for many a year with our students and younger physicians. The former does not aim to be a rival of Allen's *Encyclopædia*, nor could Lippe's *Text-book* contain the records of the *Materia Medica pura* and of the chronic diseases, and, as *text-books for students*, omissions in either work are pardonable. Nobody studies encyclopædias; they are books for constant reference, and have their own value, though they would frighten away any student if he had to learn by heart the ten volumes of Hahnemann or the fifteen of Allen. We find many omissions in Hale's first volume, and we expected to find them, for it is only a *text-book for students*. Hale's second volume carries the name, *Special Therapeutics, with Illustrative Clinical Cases*.

Here Hale stands on his own ground of "primary and secondary symptoms," and tries to prove his standpoint by practical examples, although opposed by the ruling opinion of most physicians. This second volume is a practical work, and as such will be highly esteemed, although taken *cum grano salis*, by every candid observer. We would especially call attention to the articles on *Oleum jecoris aselli* and on the combinations of our metals, which, in other works, were entirely neglected. Thus the Bromides are now the rage in the allopathic school; whether true or not, it is our duty to investigate their action thoroughly, and to apply them when indicated. The Arseniates are more valuable than many a physician thinks, and just such combinations will sometimes cure where the single ingredients failed. We can, without any mental reservation whatever, swear true allegiance to the doctrines of Homœopathy, and still claim everything which cures, be the process explainable or not (even the action of the millionth potency, the influence of the sun and of the moon, the dilutions, triturations, and potentiation of articles used as common food, *e. g.*, *Lac defloratum*, *Lac caninum*, *Fagopyrum*, *Saccharum album*), as inalienably our own. Thus teaches Holcombe, Hale indorses it, and all of us may say Amen to it.      S. L.

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*Annual Record of Homœopathic Literature, 1875, by C. G. Raue, M.D. Boericke & Tafel.*—"Well done, good and faithful stewards," we in voluntarily exclaimed, when looking over this balance-sheet of our yearly labors. Homœopathy is progressing, and scientific investigations are progressing among homœopathic physicians. Open this volume wherever you please, and you will be instructed! One volume more in 1876, and this "Annual Record" will cease to appear!

ONE VOLUME MORE IN 1876, AND THIS ANNUAL RECORD WILL CEASE TO APPEAR. Not that the editor or his assistants were tired of their labors; they are willing to work gratuitously, as they have done heretofore, but the editions sleep quietly on the shelves. We have raised a warning voice about this lukewarmness when the Institute met at Put-in-Bay, and we repeat that warning again and again. Here we take issue with our friend of the *Investigator*, who writes, p. 81 current volume: "They now declare they are all tired of this tax 'for the good of the cause,' and are beginning to discriminate in favor of certain journals and works. The demand is for practical works for busy men." Now, where can you find a more practical work than these six volumes of annual records? and still the profession is too languid to estimate their high value. It is not discrimination which allows the best journal of the land, the *United States Medical and Surgical Journal*, to expire for want of support. Marriages! Humbug! *The Western Quarterly* and our *New York monthlies* died from want of paying subscribers, and the *Record* will go the same way, if not better supported than before. Let the truth be told, and no false beacon-lights put up to tickle our own fancies.      S. L.

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*The Protoplasmic Theory of Life, by John Drysdale, M.D., Edinburgh. London, Baillière, 1874.*—It will, of course, meet a ready sale, closes the review of this work in the *Hahnemannian Monthly* of August, 1875. We might say,



it ought to meet a ready sale; but this valuable scientific contribution lies now for a whole year on the shelves of our book stores, and very few have been sold. Why? "Practical works for busy men." The "we cure" physician needs only his theological bible and his medical bible (the *Materia Medica pura* and chronic diseases) for his business, and scientific studies are a nuisance to busy men.

Is there no such thing necessary as mental relaxation? How could leisure moments be better applied than by reading and re-reading the works of a Beale, of a Drysdale, of a Rindfleisch or Striker? We perfectly agree, with the motto prefixed to the work, *mens sana in corpore sano*, and how can we hope to keep our thinking faculties in perfect order, but by varied exercise? Let us not perform treadmill labor all our life: we are made for something better; and even after reading such (perhaps to some too much materialistic) essays, it does not follow that we must accept all their propositions.

Has the protoplast and bioplast pushed aside the cell and all the theories founded upon it? By no means. Virchow's cell theory holds its own still, though we consider now the cell no longer a unit. Does the bioplasmic theory explain any better the theory of life, and does it bring us any nearer to the solution of life's problem? Not yet; the veil still hides the mystery, perhaps will hide it forever, but it may aid us in explaining some of the more intricate actions, passing daily unnoticed before our eyes. It is to me a pleasure to see how great minds follow one another; how step by step and through many errors they grope their way onwards and forwards to reach a more perfect understanding. Failures must happen; the busy ant also retraces its step, and then pushes onward again; even facts may allow different explanations: let us gain by such zeal; may it spur us onward to follow in the wake of such leaders, and books, which apparently are only scientific, will become practical demonstrators to us in our daily labors.

Let one short example suffice: To the homœopathician there is no such thing as a disease. Page 175 we read: "Life is not an entity, nor a force, but an action, and, moreover, *that action* alone which is involved in the consumption and regeneration of the protoplasm, under certain conditions and stimuli." Hence what is called disease is also only an irregular action, which may rectify itself alone, or which only needs the wave-motion of our remedies to become rectified. Inasmuch as *all structure is dead*, and inasmuch as our remedies can only act on the living material, we begin just by such studies to understand the powerful and instantaneous action of our infinitesimals. Again, that there is no mysticism in the action of our high potencies, but that they act by natural laws, will become plain to us the more we digest the ideas of Beale and Fletcher, that there is "*no such thing as a vital force*" (p. 221); force is essential to life, but utterly subordinate.

To those who are afraid to enter the portals of such materialistic studies we can give the encouraging words of a Fletcher (p. 271): "That the soul is something absolutely distinct from mind cannot be doubted, and the nature of that soul is probably such as man in his present state has neither words to describe nor faculties to understand. The soul is certainly something not material indeed, but substantial, a divine gift to the highest of God's crea-

tures, responsible for all the actions of the mind, but as totally distinct from it as one thing can be from another, or rather as something is from nothing." S. L.

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*A Report of the Hygiene of the United States Army, and Description of Military Posts.* Washington, 1875.—Our thanks are due to the Surgeon-General for the kindness in forwarding to the *North American* this valuable report. It was especially interesting to us, as on our trip to the Pacific coast we had visited several of these posts. How well do we remember beautiful Sidney, looking so clean and proper, Fort Fettermann, Camp Douglas, and others, and how secure we felt, knowing that the glorious stars and stripes sheltered us everywhere on our journey. The report clearly shows that the government takes good care of its soldiers, in health and in sickness, and we are happy to record the low rate of mortality, a proof of the skill and attention bestowed upon the sick by the Medical Department.

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*On Paralysis from Brain Disease in its Common Forms*, by H. C. Bastian, M.D., London, 1875. *Klinik der Rückenmarks Krankheiten (Diseases of the Spinal Cord)*, by Dr. E. Leyden, Berlin, 1874. *Maladies du Systeme Nerveux*, par A. Charcot, Paris, 1874.—The studies of the nervous system have of late years made prodigious progress. Here are the names of three works by three eminent authors, and our own American Hammond ought to publish soon a new edition of his *Diseases of the Nervous System*, embracing all the late discoveries. Ten years ago Leyden remarked, in his essay on the gray degeneration of the posterior cord, that the diseases of the spinal cord were always treated like step-children, and he now proudly acknowledges that for the last decade no part of practical medicine enjoyed so much the general interest of the medical world. Charcot treats in a masterly manner the tropical disturbances of the whole nervous system; and the sixth and seventh lectures of Bastian, on regional diagnosis in brain-disease and on the cerebellum and its function, are alone worth thrice over the price of the work.

We might say, with equal truth, that the symptoms of the nervous system, in the application of the remedies according to our principles, have also been treated rather shabbily, and, although we might claim quite a large share of success in our treatment, we need more strict individualization in our diagnosis and treatment, so that organic, and thus incurable, degenerations become less frequent. Hering's *Analytical Therapeutics*, if ever completed, will aid us greatly in the accomplishment of this much-desired work, and we hope that the fellows of the American Institute of Homœopathy, constituting the Bureau of Clinical Medicine for 1877, will be alive to the importance of our undertaking, and produce a work which may proudly take its place side by side with the labors of men who grace the heading of this article, and who show us what can be accomplished if we have our heart and our soul in the work.

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*The Cholera Epidemic of 1873 in the United States*, published by order of Congress. Washington, 1875.—Our thanks are due to the Hon. Surgeon-General

of the United States Army for a copy of this valuable work, and we are only sorry that none of our friends in Memphis, Nashville, and other places, found it worth while to send in their reports, inasmuch as we find in the bibliography full justice done to homœopathic literature. From the vastness of evidence the following propositions were taken :

1. Malignant cholera is caused by the excess of a specific organic poison to the alimentary canal, which poison is developed spontaneously only in certain parts of India (Hindustan).

2. This poison is contained primarily, so far as the world outside of Hindostan is concerned, in the ejections—vomit, stools, and urine—of a person already infected with the disease.

3. To set up anew the action of the poison, a certain period of incubation with the presence of alkaline moisture is required, which period is completed within one to three days ; a temperature favoring decomposition and moisture, or fluid of decided alkaline reaction hastening the process ; the reverse retarding.

4. Favorable conditions for the growth of the poison are found (1) in ordinary potable water, containing nitrogenous organic impurities, alkaline carbonates, etc. ; (2), in decomposing animal or vegetable matter possessing an alkaline reaction ; (3), in the alkaline contents of the intestinal portion of the alimentary canal.

5. The period of morbid activity of the poison, which lasts, under favorable conditions, about three days for a given crop, is characterized by the presence of bacteria, which appear at the end of the period of incubation, and disappear at the end of the period of morbid activity ; that is to say, a cholera ejection, or material containing such, is harmless both before the appearance and after the disappearance of bacteria, but is actively poisonous during their presence.

6. The morbid properties of the poison may be preserved *in posse* for an indefinite period in cholera ejections dried during the period of incubation, or of infection matter dried during the period of activity.

7. The dried particles of cholera poison may be carried in clothing, bedding, etc., to any distance ; and, when liberated, may find their way direct to the alimentary canal through the medium of the air by entering the mouth and nose, and being swallowed with the saliva ; or, less directly, through the medium of water and food in which they have lodged.

8. The poison is destroyed naturally either by the process of growth or by contact with acids : (1), those contained in water and soil ; (2), acid gases in the atmosphere ; (3), the acid secretions of the stomach.

9. It may be also destroyed artificially (1) by treating the cholera ejections, or material containing them, with acids ; (2), by such acid (gaseous) treatment of contaminated atmosphere ; (3), by establishing an acid diathesis of the system in one who has received the poison.

It would be well if not only every physician, but the whole public, were impressed by the axiom that, " it is safe to say, that malignant cholera can be excluded from our shores with reasonable certainty through an intelligent

sanitary supervision of the mercantile marine,\* for nothing is more clearly proved by the history of cholera than that epidemics of this dreaded disease can be controlled by vigorous hygienic measures. *The true remedy against cholera is preventive medicine;*" and, again, *eternal sanitary vigilance should be exercised by national, state, and municipal authorities.*

Cholera, in 1873, presented the four distinct stages, and the characteristic symptoms of each stage, which are now so well recognized as pathognomonic of cholera. In the majority of cases the attacks of cholera were announced at an early hour of the morning (about 3 A.M.), the patient awaking with an active desire to go to stool, accompanied with more or less nausea. (*Sulphur*, the great preventive of cholera, gives us this very symptom). The cramps were confined, in the majority of instances, to the extremities, commencing invariably in the fingers and toes (indication for *Cuprum*). The voice was described as changed, low, husky, lost, or unnatural (*Cuprum* again). Profuse perspiration (*Ars.*, *Cupr.*, *Ver.*), intense restlessness (*Ars.*), sensation of intense heat in the abdomen (*Ars.*, *Ver.*), while the surface of the body was benumbed; decrepit expression of face; suppression of urine. Variations of temperature in this second stage are noted, ranging from 98° to 95°; the fact that the temperature of the body is lowered by severe cramping is especially noted. During the stage of collapse vomiting diminished, stools passed involuntarily, pulse imperceptible, respiration hurried, accompanied with sighing, complete aphonia; intense thirst and sense of abdominal heat continued. A gradual rise of temperature from 97° to 103° and over, as collapse deepened, has been noted.

*Stage of Reaction.*—In many cases the convalescence was tedious, and requiring the exercise of constant watchfulness and care, confirming Jæcoud's expression, that the duration of convalescence is in direct proportion to the difficulty of repair. As sequelæ were reported, *uræmia*, most frequently in cases to whom opium or alcohol had been exhibited in large doses, and too often fatal; *hæmorrhage from the bowels*; at some localities an epidemic of dysentery succeeded that of cholera, the mortality of the second epidemic being as great as that of the first; *uterine complications*. Labor occurred generally when the patient was in the collapsed stage; the fœti were invariably stillborn, their bodies shrivelled and blue, as if their blood had been drained of its serum. No cases of uterine hæmorrhage were noted.†

The notes of treatment are as variable as the most vivid imagination could wish, and if our confrères of the old school tease us about our infinitesimal

\* Dr. J. Albu (*Deut. Zeitsch. f. Pract. Med.*, 35, 1875), shows that in every epidemic in Berlin the cholera was imported by boats; and that even in the late epidemics, although the railroads carry a far greater quantity of freight than what is brought by boats, the cholera followed the communication by water, and the first cases were nearly always observed in persons living in the boats. Albu studied Berlin house by house, and found that the streets lying close to the river or canal were more affected than other streets.

† Prof. Seitz reports (*Aerts. Int. Blatt.*, 36, 1875), that, during the epidemic of 1873-4, at Munich, dropsy was more frequently observed as sequela than in 1854; also, a vesicular exanthema, similar to varioloids, on different parts of the body, face, extremities, trunk; the pulse became stronger at the same time and heat returned. They filled with pus and gradually crusted over. He considers these exanthemata as a symptom of returning activity of the skin and of favorable prognosis.

doses, we can return the compliment by accusing them of the experiment, how much poison poor human nature can bear without succumbing, and, alas! no law to guide them, but constantly changing fashion, this year one remedy, another year another, and then forgotten and thrown away among old lumber. The only exception is Calomel; to this they adhere with wonderful tenacity. Dr. Johnston, of Texas, reports a case of recovery from collapse after the hypodermic use of *enormous* doses of Strychnia. Most physicians agree that *absolute rest in the recumbent position* is the most important aid to any treatment, and some physicians exhibited Chloral hydrate from the beginning on account of the restlessness. *No frictions* is the order of other physicians, as it would interfere with absolute rest, and *water absolutely forbidden*, but cracked ice *ad libitum*. At the commencement of the disease (diarrhœa, or even choleric), great reliance was placed on the free use of dilute sulphuric acid. It will even check cholera when given in full doses and repeated every fifteen to thirty minutes. The acid relieves the nausea, arrests the vomiting like a charm, and gradually the dejections are stopped.

The cases which have been collected show that in the treatment by Calomel, in large and small doses, there was a mortality of 23 per cent.; calomel and opium, mortality 31 per cent.; calomel, opium, and acetate of lead, 40 per cent.; calomel, opium, and stimulants, 50 per cent. Where stimulants alone were employed the mortality was increased to 59 per cent.; where the preparations of iron were used, the mortality was 33 per cent.; while, from the acid treatment, but 8 per cent. is recorded. In the seven thousand three hundred and fifty-six cases which have been collected the mortality was 52 per cent.

(Seitz (l. c.) lays great stress on the failing power of the heart and the extinction of the functions of the nerves, going hand-in-hand with the stagnating circulation, and the consequent coldness and cyanosis, and considers *Camphora* the remedy at an early stage, at any rate before the pulse fails and the strength is all gone. Even of fifty-eight cases in the asphyctic stage he saved forty-one in 1855, and in 1873 the proportion was still more favorable, because he used Camphor early. His other remedy is ether, especially when the heart threatens to become paralyzed. Redenbacher (*Aertz. Int. Bl.*, 27, 1875), praises highly Ergotin, hypodermically injected in the earlier stages of cholera, and when collapse threatens, Liquor anodyn. Hoffm., or other sulph., or ol. camphor, hypodermically injected in several places of the body, thorax, extremities, and to repeat them *pro re nata*. The indication for Ergotin is found in its power of inducing contraction of the capillaries, which are enormously dilated and overfilled with blood in cholera, and experience taught that subcutaneous injections of ether greatly strengthen the waning powers of the heart.)

The chapters on etiology and prevention of cholera are well written, and deserve close study in time of peace and strict application, before the enemy gains the power of destruction. For this purpose *general instruction is needed by the masses*. Let the people understand that a board of health must have supreme power, that its commands must be strictly obeyed and swiftly carried out, and only then cholera will cease to be a terror, for it is only too true that it is *impossible to institute proper sanitary regulations in a cholera district after the disease has become epidemic*.

Seitz and others found out that cases of poisoning by Arsenic simulate genuine cholera, and some physicians even acknowledge the benefit and recoveries from Fowler's solution—and here they stop!

Oh! ye physicians, ye healers of the sick, why will you not try remedies which have stood the crucial ordeal of many cholera epidemics and have come out victorious everywhere and at any time of the year? Your own physicians praise the action of Camphor, of Ergot, of Arsenicum, drugs which we have used for years in cholera. Try your experiment with Cuprum in those awful cases of spasmodic cholera, especially as the cramps begin in the fingers and toes; try your experiment with the tincture of Aconite, and you will be astonished how quickly that algid state passes over into a warm and benign perspiration; do not despise our beloved White Hellebore, for this same Veratrum album has rescued many a patient from the very jaws of death. You all know how sick and prostrated you felt when first you tried to ape your elders in puffing the poison-weed: oh! just try Nicotine in that dangerous dry cholera, without vomiting or diarrhœa, but with a collapse that reaction seems hardly possible. Our experience is also gained by the bedside of suffering humanity; what right have you to reject it? Your own authors acknowledge the uncertainty of your mixed prescriptions: give our simple remedies a trial, and reduce thus the percentage of death in cholera.

S. L.

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*The Lady's Manual of Homœopathic Treatment, by E. H. Ruddock, M.D.—*  
 "Sixth edition, thoroughly revised, enlarged, and portions rewritten."

Sixth edition, that tells the whole story; there is a steady and increasing demand for this manual, and vox populi is at any rate as good a reviewer as author and publisher could desire. We frequently recommend it to our lady patrons, especially when they go to their country seats during the hot season, and we find them all satisfied with the little work. The only trouble is, that gradually they consider themselves lady-physicians, which will do very well as long as they remain in the country, but by and by they offer their gratuitous services everywhere. Never mind, never mind, *let there be light*; let the people become better instructed; may they know themselves, and the arduous duties of a physician's life will be lightened, for he will be then in his right place, able to prevent disease, able to keep his patrons in better health, and the rising generation will be the gainer.

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*A Manual of Pharmacodynamics, by Richard Hughes, L. R. C. P., Ed Third Edition, mostly rewritten. Part I. The Acids—Guaiacum, 1875, pp. 387. Henry Turner & Co., London; Boericke & Tafel, New York*—If our physicians fail to be posted on the Materia Medica it surely will not be the fault of those who have written upon this subject, nor yet of our enterprising publishers. When we have a new volume, and sometimes two or three of them, every month, it will not do any longer to claim that this important branch is being left out in the cold. For, if there were no readers there would be no market for these wares, and those who produce and publish them would be forced to turn their attention to some other business.

The very newest of these works is a new edition of Dr. Hughes's popular

book, which will be completed and put forth in two parts, with paper covers, so as to be bound in a single volume. Part I has been received from Mr. Turner as we go to press. It includes the excellent course of lectures delivered by the author last winter in the London Homœopathic Hospital. Indeed, the text has been changed into the lecture-room style, and, in our judgment, is very much improved thereby. The practical and thoughtful notes and suggestions that characterized the former editions are preserved and multiplied in this. We are quite safe in saying that Dr. Hughes's book is so useful and reliable, and his method is so careful and painstaking, that it will bear to be enlarged with every new edition.

Part II will appear in the spring of 1876, and will contain the author's lectures, also, to be given in the hospital during the current session.

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### Miscellaneous Items.

#### EDITORIAL.

At last a homœopathic hospital worthy of the city of New York, and worthy of the great cause which we represent. All honor to the committee of the County Society, Drs. Guernsey, Hills, and White, through whose untiring exertions our hopes finally were realized and are now an established fact. Our thanks are also due to our worthy mayor, Hon. W. H. Wickham, and to the Board of Commissioners of Charity and Correction, Messrs. Bayley, Brennan, and Cox, who unanimously did everything to further our noble object.

It is now our duty, not only to strengthen the good opinion which these officers of our city evinced towards us, but also to prove by facts that homœopathy takes that high standard in therapeutics which its adherents constantly claim for it. So far our physicians have responded nobly to the call, and sixty, males and females, offered their gratuitous services. Of these the commissioners selected twenty-four, and we feel proud of naming as staff-physicians of the New York Homœopathic Hospital, on Ward's Island, Drs. Dowling, Bradford, Burdick, Liebold, Lilienthal, Helmuth, Paine, Doughty, and Thompson, of the New York Homœopathic Medical College, and also Drs. Belcher, Hills, Guernsey, Fowler, Demarest, Norton, Wetmore, T. D. Bradford, Minor, Berghaus, Throop, and others. Messrs. Smith & Co., with their usual liberality, offered to furnish gratuitously all the medicines needed, as the appropriation for drugs is already exhausted for 1875, and Messrs. Boericke & Tafel wisely donated valuable books in order to start the hospital library. Dr. Bacon, just returned from the hospitals of Europe, acts temporarily as house physician till Dr. Talcott, who is appointed for that office, will take charge, but we hope that Dr. Bacon will remain with us, as his hospital experience will be of great service in the first few months. Six internes will be selected from the younger physicians, and we trust that for the future this place of interne shall be the prize for students who stand highest in the colleges.

Some one remarked: "Timeo Danaos et dona ferentes." We have no such fear; we are rather glad to record that Dr. Kitchen, of the Charity Hospital, the staff of the Insane Asylum, in fact, every one connected with the Department of Charities, cordially offered us the hand of fellowship, and showed themselves willing in aiding us in establishing our hospital on a sure foundation.

*Our Colleges—A Three Years' Course Obligatory.*—Noble Harvard has taken now for several years the stand that no student can graduate from that alma mater till he has attended three full courses of lectures and passed a rigid examination, and, looking at the catalogue, we do not see that a rigid adherence to this plan has reduced the number of students, as it was predicted by those who consider a medical college a grinding mill for grinding out unfledged M.D.'s.

Year after year the conviction is forced upon teachers that it is utterly impossible to give their lectures understandingly to mixed classes, and the very minutæ, which render a subject interesting to an advanced student, must be left out in order to teach the A B C to the beginner. There is no necessity that the lectures on obstetrics must begin with the anatomy of the pelvis, nor that regional anatomy be taught by the surgeon. When the student enters college he ought to be a reliable English student, and be able to stand an examination in the studies of a general scientific course. To enter his second course he ought to have studied chemistry practically, and be well versed in the anatomy and physiology of the human body as well as in comparative anatomy, and the second year can then be devoted to the application of the well-digested studies of the first year. The graduating class has passed all theoretical studies; the whole third course can be devoted to the practical application of the theoretical studies of the two former courses. They have now plenty time to attend all clinics, and their leisure moments can be given up to the reviewing of their lectures and to the preparation for their final examination.

Thus and only thus will our colleges reach that high standard which they ought to hold in comparison with European medical education. Strict preparatory examination, a full three years' course in the college (doing away with the humbug of a preceptor for the first year, where the student acts only as pharmacist and does other menial services), and an exhaustive examination, in order to be allowed to join the fraternity. Thus only our diploma will gain that value, which it ought to possess,—a proof that its holder is well versed in every branch of medical art and science.

#### OBITUARY.—JAHK.

THROUGH the kindness of Professor Ludlam we have received advance sheets of the obituary pronounced by Dr. Catellan on the life of the immortal Jahr, which we hasten to put before our readers.

Catellan says: "The death of Jahr has produced the deepest sensation in the hearts of the friends of homœopathy in France; it will re-echo in the



farthest ends of the world, for there is no country where Hahnemann has not found disciples, and where the works of our departed friend are not known and highly esteemed. After Hahnemann the name of Jahr is most widely known and most popular, as through his labors the diffusion of homœopathy has become so widespread. He was a learned man in the best sense of the word. His erudition was immense, but his modesty was still greater, and his vast knowledge, therefore, only known to those who enjoyed his intimacy.

“Dr. Jahr was born at Neudietendorf (Saxe-Gotha), January 30th, 1800. His classical studies were carried on at Nisky (Silesia), and his progress was so brilliant, that he passed without transition from the student's bench to the chair of a professorship. A few years of laborious teaching brought on a severe disease, and Ægidi, then at Dusseldorf, cured him so quickly that young Jahr became an enthusiastic admirer of homœopathy, and in order to become a physician he entered the University of Bonn. After graduating, Ægidi introduced him to Hahnemann, and he became a collaborator on ‘the chronic diseases.’ For several years he was house physician to the Princess Frederica of Prussia, and after travelling with an aristocratic English family in France, he settled successively at Pau, Marseilles, and Lyons.

“But already Paris possessed for some time in its walls the great reformator, and Paris was therefore necessary for his welfare, as he wished to be near to the master, and in that city he consecrated his best efforts to the propagation of that doctrine which enjoyed his whole faith. His many works are too well known, and as quickly as they appeared they were translated, and eagerly read all over by the disciples of Hahnemann.

“Jahr was admired by all his friends for the superiority of his intelligence, and for the unweariedness of his mind. Many a time did he leave the most pleasant reunions and retire to his study. The distinguished lady who was his companion through life writes: ‘Many a time we breathed more free, when the last proof-sheet of the work had left the printing-office, and we hoped now for a little rest in order to enjoy him fully in the family circle. But, alas! it was always an illusion, a false hope. To-morrow a new book, a new memoir, took its place on his desk, and absorbed his whole mind.’

“Work was to Jahr an imperative necessity, an incurable passion. His mind knew no weariness, for his duty was to devote every minute of his life to the dissemination of that truth proclaimed by Hahnemann. To rest was to him only to change his occupation, and it might well be said of him what Plinius said of the great Grecian painter, *Nulla dies sine linea*.

“Jahr commanded general esteem and sympathy by the amenity of his character, by the originality of his mind, by the straightforwardness of his heart. He was a man of large ideas, of high thoughts. Egotism and envy were unknown to him. Condemned to a modest life in spite of his stupendous labors and great knowledge, no bitter word ever escaped his lips against his colleagues more favorably treated by fortune. He rather pitied those self-conceited fellows who admitted only their own superiority, who considered themselves alone worthy of success, and who enjoyed to malign their neighbors. His ambition was as limited as his needs, and he found satisfaction enough in the happy consciousness that his whole life was devoted to *the good cause*.

“For thirty years Jahr lived modestly in Paris with his family, when the Franco-German war broke out. Although he could not acknowledge Prussian nationality, being born in Saxe-Gotha, still his friends advised him to quit Paris. A Frenchman in heart, he left his adopted country in sorrow, and accepted the hospitality of the Count of Ptteurs, in Belgium. He passed there pleasant times, but as the war lasted longer than expected, he selected Brussels for his residence.

“For five-and-forty years Jahr had cultivated the soil of homœopathy with rare disinterestedness; for five-and-forty years he planted the seed with generous hand, and did not ask whether he could take part in the harvest. He was too much occupied with his scientific love to care for financial gain. His income had always been only a moderate one, and thus he was forced to take up medical practice again in his new domicile.

“Thus Jahr passed five years at Brussels, dividing his time between his books, his clientèle, and the conferences, which he so masterly delivered at the Hahnemann Dispensary to physicians and students. He lived tranquilly, if not happy. The Belgian authorities soon found out that he had no Belgian diploma, necessary to practice according to the law of Belgium, and therefore forbade him to practice. Thus his zeal was checked, and he was too old not to feel severely the injustice. His health now broke down, and shortly afterwards he could not walk out any more. Two carbuncles formed at once, but he bore stoically his sufferings; and two days before his death, with his mind unclouded, he tried with trembling hands to put his books on the shelves again, books which he left us unfinished, remaining to us a constant witness of his superhuman activity, and of the greatness of his vigorous spirit.

“His Belgian colleagues, Hammelrath, Martiny, Gaudy, and others, faithfully attended him night and day during his last painful sickness, but science and friendship could not avert the fatal hour, and Jahr breathed his last, July 11th, at 11 P.M., after having edified by his firmness and resignation all who mournfully surrounded his death-bed.

“His sweetness, his resignation, and his courage were unchanged,” writes his worthy companion to us; ‘to the last hour he kept his intelligence and his amiable fervor; thrice he bade me farewell, but I’ll meet him again where there is no mourning, no weeping, no suffering, no death.’

“Jahr was Doctor of Medicine, Philosophy, and Theology. He belonged for many a year to the Société Médicale Homœopathique de France; his name shone among the honorary presidents of the hospital. Homœopathic societies of all countries honored themselves by appointing him associate or corresponding member. The Spanish government nominated him a Knight of the Order of Charles III.

“Homœopathy will feel for a long time this irreparable loss. Like the poet of ancient Rome, Jahr can say, on looking back on his works: ‘*Non omnis moriar.*’ Let us vow to follow such a noble example set by such an honest, such a learned man, and then the apostle, who consecrated his whole life to our cause, will still remain with us.

● “CATELLAN FRERES,  
“Hom. Pharmaceutists in Paris; Members of the Med. Hom. Soc. of France.”

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**Original and Translated Papers.**

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**ARTICLE XX.—The Hæmorrhagic Infarctus.**

BY PROFESSOR C. GERHARDT.

GENTLEMEN: We have seen during our last clinical course quite a number of hæmorrhagic infarctus pulmonum on the dissecting-table, which gave decided symptoms during life. We witnessed them most in cardiac diseases, where they usually announce the last stage of a chronic diseased condition, so that one might be tempted to consider the infarct as a *modus moriendi* for patients suffering from heart disease, just as certain pneumoniæ develop themselves during slow death by suffocation. Still even in heart diseases, autopsies and clinical observations show us healing and healed infarctus. But leaving out cardiac diseases, and evading the process of pyæmia, we still meet cases of infarctus enough to study it as a benign disease, which, under favorable conditions shows itself eminently curable.

Laennec described it as apoplexia pulmonum, considering only its analogy with apoplexy, arising from cerebral hæmorrhage by the bursting of diseased bloodvessels. In the same sense Dittrich considered the infarct in relation to the diseased walls of the pulmonary artery, and even to-day some authors subscribe to this theory. It would be more just to compare the pulmonary apo-

plexus of Laennec with those anatomical changes of the brain which also cause apoplexy, and which are known as red softening, usually caused by the immigration of emboli, formed somewhere else, into the cerebral arteries, embolic apoplexy, far more rarely by autochthonous blood coagula. Laennec already met dry, firm blood coagula in the bloodvessels adjacent to infarcts, and believed that they had their seat in the veins; but most observers found them far more frequently in the arteries. Bochdalek considers them as a symptom of arteritis, and this inflammation the cause of the infarct. At a later date, Heschl considered the blood coagulation in the conducting arteries as the primitive and by it the infarct, which he describes as a hæmorrhagic inflammation. Even now, many writers still consider the infarct as the result of an inflammation, but it fails to delineate the essence of the disease, and we have to thank Virchow and Panum for the light thrown upon it. Virchow (*Gesammelte Abhandlungen*, p. 224) showed that most colorless adherent coagula in the pulmonary artery, which were formerly considered as sequels of inflammation or blood stasis, emanate from embolic processes. Panum (*Virchow's Archives*, xxv, 433) produced by artificial embolism morbid conditions in lungs of animals, which hardly could be distinguished from hæmorrhagic infarct, and most infarcts really arise from embolic closure of the conducting artery. The cuneiform tissue-part, looking with its base towards the pleura, which is provided for by this artery, becomes the seat of a retrograde hyperæmia starting from the venous system, and then, loosened in its structure and soaked with blood which coagulates, changes it into a swollen, granular, black-red mass, covered by a fibrinous net on the pleura. Laennec saw his pulmonary apoplexy mostly in the centre of a lobe, and I also witnessed such central foci repeatedly, but then they were more round. Cohnheim's doctrine, that only the occlusion of peripheral arteries leads to the formation of infarcts, has its exceptions under the influence of general or local disturbances of circulation. Still the fact cannot be denied, that there are infarcts where embolism cannot be shown, and embolism without the formation of infarcts. We meet the former especially in certain infectious diseases, the latter under diverse conditions, when death sets in too soon, in high-graded anæmia, etc. Thus

the lung-tissue might be found unchanged behind an embolus, in the state of simple œdema, red or gray hepatization, in a state of infarct, abscess, or gangrene. In cyanotic or at least not anæmic persons, a simple embolus, free of sepsis, will as probably produce a hæmorrhagic infarct, as it is apt to cause it in the brain, kidneys, or spleen.

Just as in a perfect anamnesis of a child, you ask at first after the state of its parents and after its birthday, and then after the child, so we may also divide the perfect history of an infarct in that of preceding thrombosis, of embolism, and of the infarct itself. We may find it often impossible to prove the full connection of these processes at the sick-bed, but the more we try it, the more frequently will we succeed to gain solid convictions about cause and effect, origin, and transplantation of a morbid process, and from such convictions we form again diagnostic conclusions and prophylactic views. Two years ago, a young man just out of a typhoid fever, complained of pains in the calves with œdema pedum. There certainly was a coagulum in the veins of the calves, as they develop themselves so frequently in reconvalescents. A small infarct soon showed itself in the left lower lobe, but without making any trouble. Every strong motion of the body, especially rising up and walking was strictly forbidden, as it might favor the tearing off of pieces of the thrombus. But all preaching was of no avail; unnoticed for a few moments he got up and walked about the ward, but a fit of suffocation soon stopped him and he fainted away. During his short walk the coagula in the veins of the calves were set in motion and reached some branches of the pulmonary artery. After this decided act of embolism large infarcts of the lower lobes followed, then bilateral pleuritic exudations, and it took full two months' careful treatment to bring him back to his former state.

The seat of the thrombosis, which gives off the embolus producing the infarct, may be seated in any vein of the body, only not in the roots of the portal vein, in the large trunks or the smaller veins of the lower extremities, or only in one of them, most frequently on the left side, in the plexus surrounding the uterus, in the veins of the prostata, in those of the kidneys, whose thrombosis in nurslings O. Beckmann has described so well, in

the cerebral sinuses, in the right heart. Of fifteen cases, whose autopsies I made, five times old blood coagula were found in the right atrium. Most of these cases were patients suffering from heart disease, the minority from emphysema. You will find it often very difficult in your dissections to find the original place of thrombosis to the embolus in the pulmonary artery.

The symptoms of *occlusion of the veins* show themselves most clearly where they have their seat in the extremities, especially the lower ones, and appear as marantic, traumatic thrombosis, or from dilatation. Here again we meet it more frequently on the left side on account of the more unfavorable course of the vena iliaca. Pains in the course of the parts affected, especially in the calf, hard venous cords, and below them dilated veins; œdema and cyanosis are the most characteristic symptoms. For renal thrombosis hæmaturia; for thrombosis of the cerebral sinuses, some of the objective symptoms lately mentioned may give valuable hints for the diagnosis. Frequently the addition of the embolic pulmonary infarct will strengthen us in our diagnosis. Of great importance for the supposition of venous thrombosis is the proof of such a valvular disease, leading to considerable overfilling of the right heart, and of the veins of the body. This is especially the case in diseases of the mitral and tricuspid valves. In such heart diseases it is not always the affected valves or the dilated cavities of the heart whence the emboli originate, but far more frequently from strongly dilatable parts of the venous system. Boekdalek found in fifty-nine cases of hæmorrhagic infarcts thirty-eight caused by heart diseases. Willigk, who assisted him in the autopsies, proved them to be only an accompaniment of diseases of the heart and bloodvessels. Wrany found it twelve times in seventeen cases with heart disease. Where thrombi of the right heart precede the infarct, we may guess at them from the decided prostration, the irregularity and acceleration of the action of the heart, from the enlarged dulness of the heart. The rapid appearance of larger infarcts, for which we cannot discover any other thrombotic sources, only affirms our supposition.

If aortic stenosis is accused of frequently producing pulmonary hæmorrhage, the fact can be easily explained by the frequency of thrombosis of the right heart and embolies emanating there-

from. The ultimate causes of voluntary blood coagulation in patients suffering from heart disease is unknown, but it is supposed that it stands in connection with diminution of blood pressure in the arteries, with increased blood pressure in the veins, with retardation of the current, and with changes in the nutrition of the walls of the bloodvessels. Among infectious diseases, typhus and dysentery offer the most infarcts (in two hundred and fifty post-mortems, fifteen times, the latter seven times in eighty autopsies). Variola, cholera, puerperal fever, pyæmia, frequently show infarcts; also some suppurating affections, as caries ossis petrosi, furunculosis, etc. Extensive œdema in the neighborhood of such purulent foci may lead our attention to the load of embolic material which the veins have to carry. Eleven years ago one of my students suffered from several furuncles and large œdematous swelling of the face; after a few days he had a chill, complained of right-sided stitches, copious spitting of blood, in fact he was down with an *non-febrile pneumonia*, in consequence of which a pleuritic exudation with excessive dyspnœa had developed itself. The connection is plain, thrombosis of the facial veins, emboli, hæmorrhagic infarct, pleuritis.

The *act of embolism* may run its course without nearly any symptoms, if very small or few coagula immigrate in a perfectly healthy lung or where a severe dyspnœa already existed. Very large and extensive emboli, simultaneously thrown into the lungs, cause sudden death or unconsciousness with convulsions, which end fatally. Between both extremes lie the symptoms, which show in very different latitude the occlusion of a part of the pulmonary artery, and mostly precede the manifestations of infarction. The greater the occlusion of the pulmonary artery the quicker unconsciousness will show itself. The sudden diminution of the quantity of blood carried to the brain causes this. Sometimes convulsive motions are added to it, easily explained by the cerebral anæmia, as we also meet it in embolism of the cerebral arteries. During severe syncopes, stool and urine pass involuntarily. In other cases we only meet a faintishness, a relaxation of the extremities, a vanishing of the senses with consciousness retained or weakened. One of my friends, who succumbed to such paroxysms, only complained of seeing a gray surface; hear-



ing was perfect; he recognized the persons by their voice. According to my experience severe embolic paroxysms show themselves primarily by disturbances in the functions of the large hemispheres; such are many cases of syncope, and of sudden death during puerperium or labor, especially with placenta prævia, after hæmorrhages, tearing off of the placenta, and formation of thrombi. The explanation of such a syncope may be aided by accompanying or preceding circumstances. It may set in during perfect rest in bed, during sleep; but most frequently they appear during an unusual muscular exertion, for the first time again executed, as rising for the first time, a fast walk, sometimes during a defecation. Sometimes we meet it in dropsical patients where incisions were made in the swollen parts, in patients with heart disease where *Digitalis* was lately prescribed; sometimes slight paroxysms of dyspnœa or of bloodspitting preceded the dyspnœa.

Shortly after such a paroxysm we find the patient perfectly changed, deathly anguish in his features, either pale and sallow, or pale and of a leaden hue, or with increased cyanosis. An acutely arising stenosis of the pulmonary artery renders the arterial system devoid of blood, the veins overfilled. The skin of the extremities, sometimes of the whole surface of the body, is cold, bedewed with clammy sweat. The radial pulse may be wanting, at any rate it is small, empty, without tension. The anæmia of the cardiac muscle becomes added to the genuine anæmia of the arteries, so that its contractions are without force. There are at this time two causes for the acute extension of the dull sound of the heart; the stagnation of blood in the right heart, and the relaxation of the cardiac muscle in consequence of the already mentioned anæmia. Febrile states and anæmia act generally dilating on the circumference of the heart and on the dull sound; we witness this in short, critically ending febrile conditions, as in pneumonia, erysipelas, angina, also in acute anæmia and high-graded chlorosis, where the dulness diminishes with the progress of the case.

Shortly after the beginning of the paroxysm excessive *dyspnœa* develops itself. Where syncope is absent, it is the first manifestation; in other cases it follows the former immediately. It may even increase to orthopnœa. The patient breathes with shoulders,

nostrils, mandibula; the spinal column stretches and flexes. But even the spasmodic exertion, the forced expansion of the chest and drawing in of the abdomen do not diminish the anguish of suffocation. Every word, every movement increases the dyspnœa. The respirations follow one another quickly, and reach a high number to the minute. Such a dyspnœa *per se* may hint to an occlusion of the pulmonary artery, where the temperature is low, percussion and auscultation without result, and where morbid conditions of the hæmoglobin itself may be excluded.

Whereas, such a paroxysm, in comparison with nervous dyspnoic states, gives the impression of a deepseated, very severe disturbance of respiration and circulation, so that, *e. g.*, it robs a strong man at once of all his strength; still the whole picture changes wonderfully in one, at the utmost in two days. The viable part of the pulmonary course dilates sufficiently, the pulse regains some fulness, the warmth of the skin and the redness of the face returns, the dyspnœa retrogrades to a bearable degree, and shows itself only during sudden motions. Thus, at least, is the course of a first embolic paroxysm, where the state of the organs of the chest is not too unfavorable. Where several embolies follow one another quickly, perhaps every few days, the equalization becomes constantly slower and more imperfect. Œdema sets in or increases rapidly; where it existed already, the dyspnœa remains stationary, the pulse remains small and frequent. In patients already suffering from severe catarrhal affections, the emboli may easily produce œdema pulmonum, and even this, if not too severe, may retrograde the next day.

Emboli of the pulmonary artery may cause *a rise in the temperature*. Penzoldt published a case of valvular disease with thrombosis in the plexus pubicus, and numerous embolies and infarcts in the lungs, where the temperature in the rectum rose to 39.5°; and he proved, in another case, that not the dyspnoic muscular labor, but the emboli *per se* causes the rise in the temperature. I have frequently shown the curve of a man, suffering from stenosis aortæ with embolic aphasia, who for months has complete normal temperature, only once he had for six days a febrile attack. The morning temperatures were about 38°, in the evening 38.6°, but rose during the febrile days to 39.3°, and

then returned to 38°. Simultaneously with the fever he had stitches under the left arch of the ribs, enlargement of the spleen with friction-murmur in the splenic region. I then explained this febrile state as a symptom of emboli in the art. lienalis, with consecutive formation of an infarct. In fact, the height and breadth of the febrile irritation produced by pulmonary emboli, is not always the same, and it is of importance to consider two facts: firstly, repeated embolies may produce a febrile state simulating pneumonia, which may continue for several days; secondly, the chill, which characterizes the embolic act, and which may appear alone or in connection with the syncope and the dyspnœa, is not produced by a fall in the heat of the body, as might be supposed from the diminution of the respiratory surface, but by a rise in the heat of the body according to the mode of the usual febrile chill. It may be only a little horripilation, or in other cases a severe shaking chill. Even a slight rise in the temperature may start the sensation of chilliness. We therefore consider *characteristic of the embolic process, syncope, a suffocating paroxysm and chill*, which may appear either solitary or consecutively.

*The embolus usually turns according to its gravity, and following the heavier current, to the lower lobes, only after them the middle and upper lobes become affected. Following the stronger current of the circulation the embolus turns to the right, if there are no special reasons which turn it in another direction. In fifteen cases we found the infarcts twelve times in the right lower lobe, seven times in the left lower lobe, and once in the middle lobe. As causes of left-sided emboli and formation of infarcts may be mentioned: 1. Weakening of the current in the branch of the right pulmonary artery by preceding multiple or coarse right-sided emboly, or by thromboses of the pulmonary veins on the right side. Just as the first infarcts usually form in the right lower lobe, so usually later ones in the left one. 2. Weakening of the current by shrinkage of the right lung, compression by pleuritic exudation, and from similar causes. 3. Increased current into the branch of the left pulmonary artery, caused by increased respiratory movements of the left side, while lying on the right side.*

The most early and the most characteristic symptom of the hæmorrhagic infarct, is *spitting of blood*. In my fifteen cases it was thirteen times observed. Once it appeared eight hours, twice twenty-four hours after the chill, which characterized the emboli, in other cases on the second or third day after the paroxysm threatening suffocation. The bloody expectoration may only show traces and be of short duration, or in severe cases may last for a long time. All kinds of bloody expectoration may be seen in infarcts. Prodromata may be mere bloody streaks or points in the muco-pus, and in anæmic patients we hardly find anything else. Laennec saw them expectorate incredible quantities of blood, ten pounds in twenty-four hours, thirty pounds in fourteen days; but Dittrich observed regular puddles of blood in the destroyed lung-tissue. I acknowledge never to have seen clear bloody sputa in this disease, but always found the sputa a thorough mixture of blood and mucus. In color, transparency, toughness, etc., it simulates exactly the pneumonic expectoration, but at an average it contains more blood, does not hold any light-colored croupous coagula, and appears far more rarely exclusively, but mostly interlarded between other, mostly muco-purulent forms of expectoration. We explain the latter from the small size of most infarcts (according to Rokitansky, of the size of a nut or hen's egg), and from the presence of cardiac disease, emphysema, and other diseases, giving easily rise to bronchitis. From a solitary infarct, bloody sputa may arise for several weeks, and they may contain even after a week uninjured blood-globules. But after two or three weeks, granules and crystals of hæmatoidin appear in the expectoration, so that also this form of expectoration finds its place in the history of the infarct. After a little while, one and a half to two weeks, the bloody sputa, becoming more rare, take on a brown-red or black-red color, similar to currant jelly. The bloody expectoration frequently leads our attention to the formation of an infarct, and after further inquiries we only learn of the preceding chill and dyspnoea, but the bloody sputum alone is not sufficient proof of an infarct, for it is neither found in every infarct, nor always just a symptom of this disease. Similar to the pneumonic, so is also this sputum rich in albuminous bodies, which, thrown down by alcohol, is easily soluble in water.

Among the *local manifestations* we find pretty soon after beginning of the hæmoptoe that crackling, rattling, already mentioned by Laennec. It is distinguished by the size and rarity of the vesicles, and by the fixed seat at a limited spot. The rattling murmurs become by and by sonorous; the percussion-sound becomes simultaneously at that spot dull—mostly on the right side between the angle of the shoulder-blade, vertebral column, and diaphragm. According to the circumference of the condensation, bronchial breathing will be met. The dulness on percussing the lower lobe is easily made out by a careful examination. With an infarct peripherally situated, and of the size of a nut to a hen's egg, we may in most cases expect a decided dulness. Where half or a whole lobe is full of blood, we find the whole series of symptoms met in lobar hepatization. I never met yet a large infarct which did not cause a considerable dulness; more frequently the case was reversed, so that we found with considerable dulness only a small infarct. The reason of this is plain. Œdematous lung-tissue in the neighborhood increases the dull-sounding surface. Very frequently we meet with infarcts pleuritic exudations, whose dulness must be added to those of the infarcts, situated at the lower edge of the lungs. Just as the hæmoptoe may appear in more or less time after the embolic act, so also the dull sound, shortly following the hæmoptoe, may be met one or several days after the chill or dyspnœa. It increases during several days in size and intensity, and passes only slowly off; remnants of it often remain for a long time. The dull sound is frequently also tympanitic, on account of the surrounding œdematous lung-tissue, or because the sound of a solidified part of a lung with open bronchi does not give a dull, but a tympanitic sound. The bronchial breathing of an infarct comes and disappears without any particular crackling. Irregularly vesicular, coarser rattling murmurs prevail. The vocal vibrations are increased, in so far as the bronchi are open, and no pleuritic exudation takes part in the dulness. In a third of our clinical cases, but in patients, who carefully observe themselves, we find far more frequently a *stitching pain*, corresponding to the seat of the infarct, thus a clear hint to the seat of the acoustic symptoms, and also the friction-sound hinting to the inflamed part of the pleura touching the infarct.

Let us return to the beginning of these pleuritic exudations. The occlusion of a part of the current of the lesser circulation causes all the manifestations connected with the sinking of arterial pressure and the overfilling of the veins. When secondary coagulations of some size attach themselves, especially posteriorly, to the original embolies, the disturbances in the circulation keep on and even increase; the quantity of urine is decidedly diminished since the emboli, dropsical swellings extend rapidly, the liver swells and becomes painful on account of the tension of its peritoneal coat. Such an increased disturbance of circulation is especially noticed in repeated embolies and with a weakened heart. Under such circumstances we may also meet *intensive icterus*, probably from static hyperæmia of the liver. In fact we met nutmeg liver in five cases of icterus, observed in our fifteen cases of infarcts, and during life the urine clearly showed bilirubin, but in one of my female patients even chloroform failed to give bilirubin in the urine. In my private practice I saw several such cases, and I rather doubt, whether the explanation offered by a nutmeg liver, compression of the hepatic gall-duets, is applicable to all cases, for sometimes we have also to consider the hæmatin becoming dissolved and absorbed in infarcts.

All subpleural infarcts may just as well produce *pleurisy*, as we see it during pneumonia, but fluid exudation is here far more frequent than in pneumonia. In fact, during a hepatization the mechanical relations for the production of a fluid pleural exudation are far more unfavorable than in an infarct. In the latter the pleuritic stitches are more rare and less violent, but the pleuritic friction-murmur is frequent, and lasts for a long time. The most pleural exudations of patients suffering from heart disease emanate from infarcts, and when asking the history of such patients, we always find that it began with hæmoptoe.

I never saw from a common infarct a purulent pleuritic exudation, but many sero-fibrinous ones, and most of them ran their course without any fever. The pleural part of the infarct shows itself at first somewhat dimmed, thickened, around the infarct somewhat hyperæmic, then a reticular fibrinous coating appears, under which small blood extravasations show themselves. The fluid yellow exudation, flocculent and murky, like whey, may as-

cent to the middle of the chest, and frequently causes an excessive dyspnœa; it also leads to a dilatation of the affected side of the chest. Exact measurements show that the dilatation of the thorax in pleural exudations is bilateral, but far greater on the affected side. This quality of the exudation, originating in infarctus, to dilate the thorax, deserves our special attention. Pleuritic exudations, accompanying carcinoma pulmonum, appear also with hæmoptoe, because here also a part of the lung loses its viability, but they lead to contraction, instead of dilatation, of the affected side. Pleuritic exudations, originating from simple infarct, mostly run a favorable course in spite of very stormy manifestations, especially severe dyspnœa.

Anatomically an infarct may end in (1) loosening of the rust-brown discolored focus, absorption of the blood from the alveoli and pigment remaining in the tissues; (2) discoloration and shrinking to a yellowish-white or grayish pigmented callosity of small size. This is the most frequent and most favorable change of a simple infarct, analogous to the issues in other embolies and infarctions, as the so-called fibrinous wedges in the spleen, the yellow cicatrices in the brain, found a long time after the process had run its course; (3) softening and deliquescence of the focus to a brown-red or grayish-red inodorous pulp, discharging into the bronchi, and leaving a cavity behind. This fluid excels in hæmatoidin crystals, elastic fibres and large cells containing blood-globules and hæmatoidin. Where bloody expectoration lasted for weeks, we may expect after a while these grayish-red sputa. It is certainly not impossible that such cavities from softening may finally shrink and waste away, but with the simple detrition a perforation into the pleura may be conjoined, and thus pneumothorax may arise in patients suffering from cardiac disease, or gangrene with decomposition may set in. In the latter form the prognosis is certainly most unfavorable, (4) the hæmorrhagic infarct passes into suppuration and gangrene. The quality of the embolies causes such an issue, inasmuch as it carries along matter producing suppuration and decomposition. Purulent and ichorous pleuritic exudations follow such infarcts. It is also probable that the inspired air carries to the infarct sufficient quantities of such elements of decomposition. Gangrenous infarcts are easily diag-

nosed by the foul expectoration and foul breath, purulent ones by the repeated chills. All such processes only allow a bad prognosis. They are a stage of the process of putrid infection, knowing no rest, but continually progressing through the pulmonary veins. They also cause a whole series of local dangers, pulmonary gangrene, pneumothorax, purulent pleuritic exudation, pulmonary hæmorrhage.

The diagnosis of the hæmorrhagic infarct is therefore easy, especially in patients with heart disease or with thrombi in the crural veins, and in those of the calves; but errors are still possible, especially if we consider the form of expectoration pathognomonic. A similar expectoration may be found (1) in multiple ecchymosis on the bronchial mucous membrane, as often observed in cardiac disease with left-sided endocarditis. We are, therefore, only sure of the infarct, where a condensation, slowly developing itself during several days, can be shown; (2) the pulmonary cancer, whose symptoms are so well described by Koehler and Walshe, gives mostly some bloody sputa with many mucous ones. The former are thoroughly mixed, though very bloody, about the color of currant jelly. They are very similar to the expectoration discharged from an infarct, when existing some time. Carcinomata of other organs, especially of the mamma, thyroid gland, lymphatic glands, or of the liver, may lead us in the right direction; another time a pleuritic exudation with lateral contraction may accompany the unilateral pulmonary cancer. An infarct appearing in patients suffering from carcinoma is very difficult to distinguish, perhaps also during retrogression, from secondary carcinoma pulmonum; (3) we must also consider the echinococcus pulmonum, on account of the bloody, thoroughly mixed sputa, but we find no difficulty in diagnosing it, where it rests on an upward proliferation and perforation of a cyst, having originally developed itself in the liver or peritoneum. Thus we met a patient with a large, purring fluctuating hepatic tumor, who for years, from time to time, discharged echinococcus membranes with the bloody sputa. In another case the diagnosis was nearly impossible for a few weeks. A young clergyman coughed daily up thoroughly mixed bloody sputa; he was free from fever, and felt perfectly well; only he felt uneasy on account of the hæmoptoe.



We found on the right side below the nipple, at a place which might belong to the edge of the lower lobe, a perfectly empty sound and diminished respiratory murmurs; suddenly the sputa became more copious, thinner, contained several membranes, and then lost their bloody contents. Primary pulmonary echinococci, or such implanted by emboli, can only be diagnosed when they form a tumor on the thorax, or when membranes are coughed up; (4) the differential diagnosis between pneumonia and infarct must never be based on a solitary symptom, as the sputum, the beginning with a chill or dyspnoea, the presence or absence of high fever. We may consider the diagnosis of infarctus proved, when embolic material and an embolic paroxysm are before us without any fever whatever, lasting for several weeks, causing a pulmonary condensation in a lower lobe with hæmoptoe. Even where the subjective troubles are very slight, and the condensation in a lower lobe very circumscribed, small infarcts may still be made out, if we only keep before our eyes the whole history how the infarct developed itself. The diagnosis becomes more difficult where we meet a high fever with the infarct.

Prevention of disease is better than cure; and this proverb finds its full value in relation to the infarct. It is true, we have no remedy to abolish the coagulability of the blood in the body, or to prevent thrombi from entering the circulation; but we often meet venous calculi and canalized adherent thrombi, showing us that coaguli may remain lying in a bloodvessel without doing any damage, and that they may enter in such relations with the bloodvessels, that they cannot be carried away any more. We wish here to lead your attention to the following points. The antiseptic treatment of wounds diminishes the danger of continued traumatic thrombi. The pricks with needles, which in anasarca are successfully made on the lower extremities, ought to be rather broad incisions with a lancet, and kept clean with chlor-water or chameleon solution, inasmuch as such mere prickings easily become the starting-points for emboli in persons suffering from heart disease. In furuncles, situated in loosely adhering and easily swelling parts of the skin, we find the ice treatment of Hebra indicated, as it prevents the spread of the inflammation and the

swelling of the adjacent tissues, and thus diminishes the danger of thrombosis.

It may here not be out of place to speak a few words on the treatment by Digitalis in heart disease. Well compensating valvular troubles, causing very little palpitation, are frequently treated with Digitalis, as if this drug were a remedy for valvular affections. Shortly after we succeed in producing a retardation of the pulse, it becomes remarkably irregular, weak, then frequent and mixed, all difficulties increase, the dulness of the heart extends in breadth, pulmonary infarcts arise, hinting to cardiac thrombosis. It is a great mistake to give Digitalis on account of every affection of the heart. The troubles must have increased to a certain height before that functional hypertrophy of the heart is added to the already present insufficiently compensating cardiac hypertrophy, which offers the basis for the action of Digitalis, and it should then be given in large doses, to get its full action in one or two days, and then the use of this remedy is contraindicated for some time. A long-continued use of Digitalis may also favor the formation of coagula. Whenever in heart disease Digitalis is given for the first time, it is the duty of the physician to watch closely its action, for it may act contrary to our expectations, and its use must be stopped; suppose, *e. g.*, it produces a stenosis of the arteries, but not a corresponding increase of blood pressure, we find then the veins and auricles dilated, and the formation of thrombi favored. Wherever thrombi are present the use of digitalis is dangerous, inasmuch as the acceleration of the blood current in the veins may lead to the loosening of the thrombi.

For persons suffering from thrombi, quick and rapid muscular exertions, yea, even unusual movements of the body are dangerous. Take my advice and keep your convalescents with thrombosis quietly in their beds, till œdema and collateral dilatations have passed away; an extremity with such thrombosis should be rendered immovable by wadding and the starch bandage. We see too often in such case the infarct following the thrombosis.

The embolic paroxysm in its worst cases: sudden death, loss of consciousness with convulsions, leaves very little time for medical action. Induction of artificial inspiration by application of the induction current, of expiration by compression of the thorax is

here mostly indicated, but the muscular irritability soon expires. A venesection may diminish the stagnation of blood in the veins, and thus the current of blood through the narrowed lumen of the pulmonary vessels.

Most frequently we have to fight the severe state of dyspnœa, which may last for hours after the embolic closure of middle-sized vessels. We apply Morphium hypodermically with great benefit. The repeated injection of larger doses requires some care where there is little diuresis, on account of its easily cumulative action.

An infarct once set needs only favorable external circumstances to heal, where the embolus does not carry any special putrefying agencies. A pure air and quiet position are the most important conditions. An air full of sepsis must produce detrition and decomposition of the infarct. As it is generally supposed that the formation of the infarct produces a loosening of the structure, and as we have examples of tearing of the infarct and of the covering pleura, respiratory motion ought to be diminished to the minimum. We may limit the pulmonary circulation by rest, so that there is just enough left for the exchange of gases. Every muscular exertion causes a dyspnœic paroxysm with the greatest difficulty of breathing. Where a pleuritic exudation is added, it abolishes the influence of the respiratory movements on the lowest parts of the lungs, the usual seat of the infarct, and acts thus favorably. Where softening of the infarct takes place, a pleuritic pseudo-membrane, which is kept closely adherent to it by the pleuritic exudation, may be considered as a saving dike against the rupture of air into the pleural sac. Really, an infarct cannot stand violent treatment, and it is an axiom that *an infarct, which is not infected from an embolus, nor from the inspired air, heals for itself. The danger lies in the emboli. When the infarct forms itself, the danger is passed.* Where the state of a patient with heart disease becomes greatly aggravated after the formation of infarcts, we find the cause of it in circulatory disturbance from the occlusion of pulmonary vessels, but not in the formation of infarcts in the lung-tissue. A stenosis of the pulmonary artery is added to the other valvular troubles, increasing the disturbances.

I would not advise to empty a pleural exudation after infarct by drainage, for thus a softening infarct may be made to break

through into the pleural sac. The course of such exudations is after all a favorable one; the dyspnoea may require at first the copious use of morphine, after awhile a roborating treatment suffices, and in extreme cases a diaphoretic treatment may produce the absorption of the fluid.—*Volkmann's Klin. Vorträge*, No. 91.

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## ARTICLE XXI.—Physiological Psychology.

BY C. G. RAUE, M.D.

(Continued from page 228.)

THOSE that furnish a medium for the action of the voluntary muscles, “terminate underneath the sarcolemma by a coalescence of the sheath of Schwann with the sarcolemma. The sheath of Schwann accompanies the axis cylinder to this point. The end of the axis cylinder is always an expansion of considerably enlarged surface, which in all cases is formed by a flat ramification. This terminal plate is sometimes similar to a membranous, at other times to a fibrinous expansion. In most cases the plate rests upon a basis of nuclei and fine nucleated protoplasma; in other cases these nervous plates exhibit so-called terminal nervous buds. In no case does the terminal end of the nerve penetrate into the interior of the contractile cylinders, and never does it embrace their entire periphery. Short muscular fibres are apt to receive but one nerve-fibril, while long ones receive several.” (W. Kühn, in *Stricker*, p. 165, 1872.)

Those nerves that furnish a medium for the action of the involuntary muscular tissue contain dark-bordered and pale fibres in varying numbers; they lie outside of the muscular structure in its connective tissue and form a plexus. From here finer fibres start in various directions to form a still finer network. At the points where they cross (Knotenpunkte), there are found corpuscles with distinct nuclei, which resemble nerve-cells. This fine network lies immediately upon or below the membranes of the muscles and surrounds the muscular fibres from all sides. Although the finest nerve-fibrils appear to join the nucleoli of the corpuscles, these are still not to be considered as the actual terminations, because in numerous cases other nerve-fibrils issue from these

nucleoli to pass in opposite directions through the substance of the corpuscles towards and into the intra-muscular network. The nucleoli are, therefore, not the ends but only crossing-places of the finest nerve-fibrils which form this network. (J. Arnold, in *Stricker*, 1872, p. 143.)

Those nerves that furnish a medium for glandular action pierce, according to Pflüger, the membrana propria and ramify in finer and finer fibrils around the epithelial cylinders, enter directly into a cylinder cell, or disperse themselves as a subepithelial network to dive into the glandular cells. According to later researches this same connection exists between the nerves and the liver-cells. (Pflüger, in *Stricker*, 1872, p. 313.) Now since even the most recent advances in microscopic physiology have not dispelled all doubts in regard to the termination of these nerves, which Virchow collectively calls "working nerves" (*Cell. Path.*, p. 294), still less can we expect an assured and scientific precision when we endeavor to decide their central beginnings. The chief conclusion which we are warranted to draw is that the nerves which are the media for voluntary action arrive from the brain and the anterior roots of the spine, while those which are the media of involuntary and glandular action take their origin in the sympathetic nervous system. The cells with which the motor nerves stand in connection within the spinal column, are somewhat longer than those with which the sensitive nerves are connected. In other central parts, however, a similar distinction in size has not been found. Neither does the calibre of the different nerve-fibres furnish a criterion as to their several functions.

#### § 87. THE WHITE SUBSTANCE.

The white substance of the brain and spinal marrow is principally composed of fibres or tubes, hence it is also called the *fibrous* substance. These fibres are continuations of the millions of nerve-fibres which arise in the gray substance.

It has been general usage to trace the nerves from their peripheral terminations upward towards their centres in the different groups of gray matter. As, however, it is more conformable with our psychological view, we shall reverse this order and adopt the plan of Theodor Meynert as developed in his treatise "Vom

Gehirne der Säugethiere," in *Stricker*, 1872, p. 694, *et seq.*, in explaining cursorily the relation of the white substance to the different groups of gray matter.

Considering, as we do, the gray matter as the inmost and highest bodily organization, by means of which the mind stands in communion with the external world, we shall take it as the point from which the white substance issues. "The sensory nerves can then be likened to its feelers and the motory nerves to its fangs." These multitudinous nerves emerging from the entire surface of the cortical gray draw to a convergence and constitute the corona radiata, in their downward course directed towards the central or cavity gray of the brain. Their further emergence (still converging) takes them through the foramen magnum and thus to the central gray of the spinal marrow, from whence again they issue in the form of the innumerable peripheral nerves divergently to their respective organs. This sweeping delineation, however, needs some more special explanation. The white substance, after emerging from the cortical gray and forming the corona radiata, does not pass uninterruptedly to the central or cavity gray of the brain and spinal marrow; the conglomerations of gray matter in the cerebral ganglia are its first destination, namely, the corpora quadrigemina, thalami optici, and corpora striata. With this first link in the chain of the white substance projecting from the cortical gray, we must count also the *corpus callosum*, which, by its transverse fibres, connects the two hemispheres of the brain, and forms their great transverse commissure, and the *longitudinal commissural fibres*, which connect together distant parts of the same hemisphere. In the intervening ganglionic masses, or in the second group of gray matter, a *second* link in the projection of the white substance is developed, forming the *crura cerebri*, or the *peduncles* of the cerebrum, which proceed to the pons and medulla oblongata to constitute the peripheral white substance of the spinal cord, which finds its termination in the central or cavity gray of the medulla spinalis. The *third link* of this projection of white substance develops itself in the third group of gray matter. This group, the *central or cavity gray*, begins in the region of the third ventricle, surrounds the aquæductus, extends to the sinus rhomboideus and in the lower half of the oblongata, and in the medulla

spinalis encircles the central canal. The fibrous substance here projected constitutes all the nerves from the third pair of cranial nerves arising in the gray of the aquæductus Silvii down to the last and lowest nerves of the spinal marrow. Thus it appears that the innumerable multitude of nerve-fibres in the cortical gray converge at first into several masses, which for the most part radiate respectively to the corpus striatum and the nucleus lenticularis, to the thalami optici and the corpora quadrigemina. In the second link these several masses become reduced to only two, the peduncle and tegumentum of the crus cerebri, which proceed respectively to the anterior and posterior portion of the pons and oblongata to merge at last into the spinal cord, and find their termination in the central or cavity gray of the spinal cord. From here and from the cavity gray of the brain, as has been stated above, the last link of the projecting fibrous matter issues, diverging in the form of the peripheral nerves to be distributed over the entire body. For further particulars, especially in regard to the relation of the cerebellum to the cerebrum and the second link of projection, I must refer to the original and elaborate treatise of Th. Meynert cited above.

#### § 88. CONNECTION BETWEEN THE GRAY AND WHITE SUBSTANCE OF THE SPINAL AXIS.

Although the spinal axis has been the subject of very numerous and elaborate anatomical as well as physiological investigations, the exact relation between its two constituents is still not determined beyond all doubts. We shall continue to reverse the customary way of tracing the course of the nerve-fibres, and begin with the second link of projected fibrous substance which at last represents itself as the white substance of the spinal cord. The proportion of this substance to the gray matter within is greatest in the cervical region, from whence it gradually decreases in quantity throughout the whole extent of the cord until at the *intumescencia lumbaris*, and still more at the *conus terminalis* it is reduced to a very thin coating of the irregularly shaped gray matter beneath. What has become of this multitude of fibres? Where did it gradually lose itself?

The idea, formerly entertained, that the fibres of the nerve-roots ascend in the column which they enter, and that by this means the white substance gains by degrees in quantity from below upwards, is not tenable; for it is anatomically proved that, if not all, at least the great majority of the root-fibres pass directly, either horizontally or obliquely, through the white substance into the gray matter without taking any part in the formation of the white columns. This is especially plain and easily demonstrated in the case of the anterior roots and anterior columns. However, we ought not to say the root-fibres pass into the gray matter, as in fact they originate there and pass out of it through the white substance. For in holding this standpoint, that is, in considering the *cavity gray* as the third great nerve-centre which receives the second link of projected white substance to form and mould it for final distribution all over the body, we shall gain a much more lucid insight into the extremely complicated course which the nerve-fibres present within the gray and white substance of the spinal cord.

In fairness, however, to the eminent physiologists whom I have quoted, it is but right to say that the following view as to the connection between the gray and white substance of the spine, is wholly my own, though it seems a logical result of their investigations.

The white substance of the spinal cord, which anatomically has been divided into the two anterior, the two lateral, and the two posterior columns, enters the cavity gray in the following manner, namely: The different columns resolve gradually into primitive fibres, which they give off continually all the way down to corresponding portions of the cavity gray within. Thus the anterior columns send off fibres to form the *anterior white commissure*, which is found throughout the extent of the spinal cord lying directly in front of the anterior gray commissure. Its formation is effected in this way, that the fibres which emerge from the *right* anterior column curve toward the left, and taking a horizontal course, enter the anterior cornu of the *left* side, while the fibres which emerge from the *left* column curve in the opposite direction, and pass in the same manner towards the *right anterior horn* of gray matter. This causes a decussation of the fibres of



the two anterior columns immediately in front of the gray commissure, which is known under the name of the *anterior white commissure*. The correctness of this view is strengthened by the anatomical fact, that the width of this commissure increases or decreases with the volume of the corresponding gray substance.

The anterior portion of the lateral columns gives off fibres to the anterior cornua of the same side, while the fibres of the posterior portion of the lateral columns bend towards the corresponding posterior cornua. A similar relation exists between the fibres of the posterior columns and the corresponding posterior cornua of the cavity gray, but this relation is not nearly so simple nor so easily demonstrable.

The question, then, what becomes of the multitude of vertical fibres which constitute the spinal cord, is thus answered: Its compact mass gradually resolves into primitive fibres, and because these continually pass off to corresponding parts of the spinal gray, the gradual diminution of the white substance in quantity as it passes from above downwards is the natural result.

Our next inquiry relates to the course of fibres within the gray columns. These latter are invested by groups of numerous nerve-cells, larger ones in the anterior, smaller ones in the posterior cornua. These cells may, as has been mentioned before, be compared with stations in which numerous nerve-fibrils converge from different regions, and from which one passes in a horizontal direction to the *anterior* roots. This view is strengthened also by the anatomical fact that in the cervical and lumbar enlargement of the spinal cord, where we find an increase of root-fibres, there exists also a decidedly larger number of nerve-cells.

Less clearly defined is the relation between the cells of the posterior cornua and the posterior roots. It is, however, not the place here to enter into a discussion regarding the various views of the different authors upon this subject. This much is certain, that some of the fibres pass horizontally backwards through the *substantia gelatinosa* into the posterior columns and the posterior portion of the lateral columns, where they, as primitive fibres, enter into a corresponding posterior root; that others pass in various directions through the posterior cornua, enter the posterior columns, in which they run for a shorter or longer distance upwards in order

to join a root situated higher up, and that still others, pursuing originally the same course, after entering the posterior columns turn downwards to join a lower root. Besides these fibres there are others which likewise pursue a horizontal or nearly horizontal course. In this category belong the anterior and posterior gray commissures, which form links of connection, the first between the anterior (right and left) cornua, and the second between the posterior (right and left) cornua. Other fibres pass directly from the anterior through the posterior cornua and columns to corresponding posterior roots. There are also many fibres which pursue either an upward or downward course in the gray columns to form connective links between different portions of the spinal marrow (Henle, *Nervenlehre*, pp. 63-73). The several starting-points, however, of these various nerve-fibres have thus far not been ascertained. According to Gerlach it appears that the first and finest nerve-fibrils form an exceedingly fine nervous plexus, from which some of them converge to corresponding cells, to be conveyed and distributed as axis cylinders in various directions, while the destination of others is entirely unknown.

#### § 89. FUNCTION OF THE SPINAL CORD, REFLEX ACTION.

A series of interesting phenomena has been termed by Prochaska, a Vienna physician, nearly a century ago (1778), *reflex action*. By this is understood that an impression made upon the general sensory nerves is conveyed to the spinal gray, where it is transformed into an excitant of corresponding motory nerves, by which again certain voluntary muscles are set into motion; in short, by means of the spinal gray a sensation is converted into a movement. Reflex action, then, physiologically speaking, requires afferent nerves, gray central substance, efferent nerves, and muscular tissue. The afferent nerves receive the external stimulus, the gray substance transforms and reflects it, and the efferent nerves carry it to the muscular tissue, which contracts and thus causes motion. Such reflex action differs from voluntary action in this, that the external excitation is immediately converted into muscular motion, while voluntary action originates from a central or will stimulus. But "reflex phenomena are by no means confined to

the action of the spinal cord. The movements of the iris are reflex, and yet they take place in many instances without the intervention of the cord. The movements of respiration are reflex, and these are presided over by the medulla oblongata. Movements of the intestines and the involuntary muscles generally are reflex, and they involve the action of the sympathetic system of nerves. Impressions made upon the nerves of special sense, as those of smell, sight, hearing, etc., give rise to certain trains of thought. These involve the action of the brain; still they are reflex. In this last example of reflex action, it is sometimes difficult to connect the operations of the mind with external impressions as an exciting cause; but it is evident, from a little reflection, that this is often the case. This fact is illustrated by operations of the brain which take place, as it were, without consciousness, as in dreams. It has been clearly shown that a particular direction may be given to the thoughts during sleep by impressions made upon the sense of hearing. A person sleeping may be made to dream of certain things, as a consequence of hearing peculiar noises. Examples of this kind of mental reflex action are sufficiently numerous and well authenticated. (Compare Hammond, *Sleep and its Derangements*, Philadelphia, 1869, p. 127, *et seq.*) From the above considerations it is evident that the term reflex may be properly used in connection with many phenomena involving the action of the sympathetic system, and of the brain; but it is generally understood as applying especially to involuntary movements, occurring without consciousness, as the result of impressions made upon the afferent nerves, and involving the independent action of the spinal cord. (Austin Flint's *Nervous System*, 1872, p. 299.)

This explanation of reflex action implies that external impressions cause *sensations* which are *unconscious*. But are *unconscious sensations* not a *contradictio in adjecto*? If we remember what has been stated as the difference between sensation and perception in paragraph 57, and also what has been said in regard to the development of consciousness in paragraphs 9 and 10, we shall find no difficulty in comprehending this term.

Sensations are in the sense of the new psychology elementary modifications (a union of single external elements with corre-

sponding single primary faculties), in which the quality of consciousness exists yet in an embryonic form. Not until many similar impressions have united into one homogeneous aggregate does the consequent mental modification rise into consciousness, and in the lower senses, from want of retentive power, consciousness does not grow very marked and clear even by the repetition of similar impressions. (§ 16.) An impression of external elements, if it does not excite similar vestiges previously obtained, which in virtue of their multitude and combination possess the quality of consciousness, may, therefore, properly be said to cause an *unconscious sensation*, that is, an elementary union between single external elements and corresponding single primary faculties, which has not yet ripened into consciousness. Even Virchow, from his materialistic standpoint, recognizes unconscious sensations.

In his lecture on the spinal marrow (*Sammlung Wissenschaftlicher Vorträge*, edited by Virchow and Holtzendorff, v. serie, Heft 120, p. 25) he says: "The leg of a paralytic which jerks when stung, without feeling the sting or being conscious of it, would undoubtedly remain perfectly quiet if there were no sensible nerves which carried the message of the sting to the spinal marrow, and if the spinal marrow did not pay attention to this message. The spinal marrow, then, acts in this case in place of the brain of a man with unbroken connection in his nervous system; what in another case, perhaps, might have been produced by an act of the will, takes place here by virtue of the innate power of the spinal marrow. Shall this be called sensation? This term of course can easily be misunderstood, as we are accustomed to consider each sensation as a conscious act, and it needs first some explanation, even a certain mental training, in order to learn that there exist also perceptions which lie outside of the range of consciousness, and which, nevertheless, appear in all other respects like sensations. And as the same movements are conveyed by sensible nerves and are distinguished from other conscious sensations only in this, that they are prevented from reaching the brain by mechanical obstacles and becoming conscious, it is, indeed, difficult to find another expression for them. Nay, it is even a necessity to preserve this expression, as there

are also reflex phenomena in which the brain participates, and in which, therefore, really conscious sensations take place, while the movements resulting therefrom are forced and involuntary. A person who looks into a very bright light and shuts his eyes in consequence, makes reflex movements, for with a normal sensitiveness of his eyes he is scarcely capable of preventing these movements of the eyelids, and yet it is a conscious sensation upon which this forced and involuntary motion of his eyelids follows." We may, then, properly assume that even reflex actions in their simplest forms take place on the basis of psychic forces. The want of consciousness in these acts is attributable either to the low degree of retentive power possessed by the respective primary faculties, or to the elementary nature of these acts, or lastly to the fact that the similar vestiges, previously obtained, are not excited into consciousness by the new impression, as for instance in cases of mechanical obstacles, or in cases where psychic causes intervene, of which later. And we shall see this view reinforced by evidence more explicit and telling, when we consider the more complex forms of reflex action. They are, as Virchow remarks, often so plainly marked as conformable to a purpose, that they appear to be acts of design. To this also belong in a certain respect all that has been collectively designated by the word *instinct*.

But we have also experiments of Pflüger upon this point, which are very remarkable. "These experiments have been repeatedly confirmed, and there can be no doubt with regard to their accuracy. Pflüger carefully removed from a frog the entire encephalon, leaving only the spinal cord. He then touched the surface of the thigh over the inner condyle with acetic acid, to the irritation of which frogs are peculiarly sensitive. The animal thereupon rubbed the irritated surface with the foot of the same side, apparently appreciating the locality of the irritation, and endeavoring by a voluntary effort to remove it. The foot of this side was then amputated, and the irritation was renewed in the same place. The animal made an ineffectual effort to reach the spot with the amputated member, and, failing in this after some general movements of the limbs, rubbed the spot with the foot of the opposite side." (Austin Flint's *Nervous System*, p. 305;

Pflüger, *Die Sensorischen Functionen des Rückenmarkes der Wirbelthiere*, Berlin, 1853, p. 124, *et seq.*)

Considering these facts with an unprejudiced eye, it is certainly a fruitless attempt to explain them *mechanically*, or to evade explanation altogether by simply calling them *automatic*. For these experiments, repeatedly confirmed, prove clearly that an external stimulus is capable of causing not only simple reflex movements, but a whole train of actions conformable to a purpose, and carried on *designedly* and persistently to its final realization:

By the weight of these considerations Pflüger found himself drawn to the conclusion that the spinal cord is endowed with a special consciousness of its own (Rückenmarksseele). This view of course found much opposition among those who cling to the hope that all mental phenomena will one day be explained upon a purely materialistic basis. But, although this conjecture is open to other objections than those urged with this view, we must consider it as a very remarkable and sensible suggestion, especially since it originated upon the soil of experimental physiology. Pflüger goes on to strengthen his views by a series of experiments made upon persons while asleep, all of which tended to confirm more or less his previous observation made upon frogs. But there are also *morbid* states of the system which testify to the same effect. As such may be mentioned some forms of somnambulism. A case to the point is related by Hammond in his monograph, *Sleep and its Derangements*, p. 205, Philadelphia, 1869, which occurred under his own observation.

A young lady, who had lost her mother, became affected with symptoms resembling those met with in chorea. These were succeeded by attempts to get out of bed during her sleep, and to walk about in the house. In this state Hammond had the opportunity of examining into her condition. She came out of her sleeping apartment partly dressed, went slowly downstairs to the parlor without noticing anybody around her; took a match which she had brought with her from her own room, rubbed it several times on the under side of the mantel-piece until it caught fire, turned on the gas and lit it; she then threw herself into an arm-chair and looked fixedly at a portrait of her mother which hung over the mantel-piece. A large book held between her eyes and

the picture did not stop her from gazing in the same direction; neither did several motions with the hand, as if about to strike her in the face, make her wink. "I was entirely satisfied that she did not see, at least with her eyes." Upon the application of pungent vapors to her nose, she gave no evidence of feeling any irritation; sour and bitter substances inserted into her mouth had no other effect; scratching the back of her hand with a pin, pulling her hair, and pinching her face, appeared to excite no sensation; on tickling the soles of her feet, however, she at once drew them away, but no laughter was produced. "The spinal cord was therefore awake." She finally was roused from her sleep by shaking her head, when she burst into a fit of hysterical sobbing, but had no recollection of anything that had passed, or of having had a dream of any kind.

This interesting case brings before us an instance, in which it plainly appears that mental modifications (here the all-absorbing longing for a beloved mother), although seemingly unconscious were nevertheless capable of producing a whole train of actions as correctly as if their execution had taken place under the full light and guidance of consciousness. And these same phenomena we may witness going on under perfect normal conditions, if we observe the actions of a newborn child. "The newborn child," says Virchow in his lecture cited above, "is a beautiful specimen of an almost purely *spinal being*. It does not show the least sign from which we could infer that its volitions or actions are conscious. All its actions bear the spinal character, and in so far they might be called essentially instinctive. Let us look upon such a child when it is hungry. It begins to be restless, and makes various motions, especially with the head; it turns the mouth towards the side and moves the lips. 'It seeks the mother's breast.' If the breast is given, it at once takes hold of it, and commences to suck and to swallow. When satisfied, it lets it go, stretches itself contentedly and goes to sleep. If, on the contrary, it does not find the breast, then its motions become livelier; its face assumes the expression of vexation or anger, and turns red; it begins to cry. The more it cries the more violent grow its motions, until the whole body becomes involved in them. If we now put a finger into its mouth, it presently commences to suck and to be quiet, but soon 'it finds out that it is being de-

ceived,' and cries louder than ever. Can we recognize these actions as truly *conscious* or made with *design*? Surely not; we merely impute to the child what from long experience we have learned to be our own conscious motives. We say: 'the child will,' 'it seeks,' 'it is vexed;' but in truth it knows nothing at all of these mental acts. It has yet to learn them all by many sad experiences in the course of time as its 'spirit develops.' But what it completely possesses is the general sense of feeling. The restlessness, the vexation, the contentedness which it shows, manifestly prove that (in the above chosen instance) it not only has a sensation of hunger and of satisfaction, but distinguishes also the conditions of its body as pleasurable or painful. It possesses, therefore, a *faculty* or *power of estimating* its own sensations, by means of which, so to speak, the value of the sensations and of the conditions of the body based thereon, are measured. It has the faculty of perceiving whether a condition be beneficial or injurious; it shows pain or delight. Does it really judge? Does it think without knowing it? Does it reflect without willing it?" In this passage Virchow intermixes remarkably truth, half truth, and wrong conclusions. It is true that the newborn child is a notable instance of an almost purely spinal being, and for the simple reason that its higher senses are not at all developed, or yet so little that a decided influence of the same over the lower is absolutely undiscernible. The lower or vital senses, on the contrary, have at that time a considerable start of the higher. Already during the period of gestation the faculties of the sympathetic system as well as those of the general sense of feeling, and from the second half of the period of gestation at least, the muscular sense too, have been in continued exercise, that is, they have been continually acted upon by external elements, of which numerous vestiges, according to their similarity, have united into various mental aggregates. Although these aggregates by themselves never attain to any high degree of consciousness, they nevertheless are, in their nature and their activities, entirely like all other mental modifications. They bear, so far as they consist of many similar vestiges, the character of conceptions, if ever so dim, in comparison with the light of higher mental developments; they assume the character of conation in all forms of desire and



aversion, and in quite a considerable degree, as the external elements are not held very tenaciously by this class of primary faculties; and when several of these modifications are simultaneously excited into consciousness, they naturally produce that consciousness of their difference which we have called feelings of pleasure or of pain. Now as these various aggregates, by means of mobile elements, are constantly conjoined into various groups and series, which in consequence of this union enjoy a common re-excitation, we need not wonder when we see the child born with "a faculty or power of estimating its own sensations," or see it "wish, seek, or desire, or getting vexed, or acting in various manners to a purpose," because these mental acts do really and truly exist in its lower senses, and are the necessary consequences of mental development anywhere. And as furthermore these lower senses have their bodily substratum in the central gray of the spinal cord, for the sympathetic system is most intimately interwoven with the spinal cord by the rami communicantes, it is further plain why the first manifestations of a newborn child are essentially of a spinal character. And we may apply this psychological explanation, in its full bearing, to the experiments of Pflüger upon decapitated frogs. As long as the animal *lives* after such mutilation, its lower senses, the substratum or medium of which has not been injured, continue to act in their accustomed ways, not *mechanically*, not *automatically* (which term explains nothing), but strictly in accordance with the psychic developments previously obtained. It is not a *special soul* which animates the spinal cord, but it is the lower senses which find the centre of their medium or substratum located therein.

Virchow evidently feels the weight of Pflüger's experiments, but is nevertheless averse to his conclusions. He says, "Undoubtedly, the power of estimating its own bodily conditions (Schätzungsvermögen) has its seat in the spinal cord. But shall we conclude that the spinal marrow of the frog has a soul (Gemüth)? Are the feelings of pleasure and pain, the awakening desires and effects, the actions consequent thereon, to be ascribed to a special soul? Or, are not the anatomical elements of the spinal cord, the several living parts of the same, fully sufficient to explain the sensation as well as the estimation of it, and the con-

sequent actions, by the peculiar and mutual action of these living parts upon each other?" Although he cannot prove the assumption which lies embodied in the last proposition, he, nevertheless, from want of an adequate insight into the elementary psychical processes, and actuated by his preconceived ideas that all mental phenomena are the result of chemical and molecular changes in the nerve-cells, takes this view, which he expresses in the following sentence: "It is impossible to accept, beside the organic structure of the spinal cord, still another particular, unanatomic, or, as some prefer to call it, an immaterial agency, which feels, thinks, wills, and acts," and further on: "Nothing speaks for such an assumption (of an immaterial agency) which is contradictory to all experience and logic, but our ignorance of the finer construction of the spinal gray, and the difficulty, yet unsolved, to unravel the interior connection of this incredible and at the same time infinitely complex tissue." As all this is merely a reiteration of the common materialistic belief and a confession of the defectiveness of physiology for the explanation of these problems, with a hopeful view that the future might yet be able to solve them, I need not again repeat what has been said in refutation of it, and shall simply refer to the respective paragraphs of this work. But when he undertakes to strengthen these views by alluding to the fact that the excitability of the spinal organism may be increased or diminished at pleasure by poison, medicine, or stimulants, and then asks: "Shall we suppose that these substances act upon the immaterial substance? that strychnine or curare affect the spinal soul or the general sense of feeling?" We may say that this is, as in the case of Maudsley, a mixing up of condition with cause. These substances indeed act upon the primary faculties of the "general sense of feeling," as well and in the same way as other external stimuli do. And when we see that strychnine increases the irritability of the spine, and that curare paralyzes the nerves without affecting the irritability of the muscles, it is plain that then these substances act as poisons, as overdoses, and attack the bodily substratum in a degree as to alter and change the *means* or *conditions*, by and under which a normal activity of the primary faculties alone is possible; the "spinal soul," or the "general sense of feeling," is only secondarily affected, in so far

as its normal activities are interfered with by the abnormal condition of its bodily means to execute them.

### § 90. VOLITIONS.

Theodor Meynert, in his highly interesting essay on the brain of mammals (in *Stricker*, p. 694, 1872), makes the following remarks: "The first attribute to be ascribed to the nerve-cell is *capability of sensation* (*Empfindungsfähigkeit*). The results of physiological researches do not yet entitle us to place the process of sensation only in one certain section, for instance in the brain only; for the fact constrains our fair consideration that the amphioxus shows unmistakable signs of *conscious* animal life, although it is endowed only with a *spinal* central gray. *But to attribute to any of the nerve-cells any other fundamental quality, as for instance that of a motory principle, is entirely inadmissible.* Motory quality is possessed only by the muscular tissue, and if any excitation of a nerve-cell, which may be identical with the process of sensation, finds means and ways to be converted into muscular force, then the relation of a central organ to the movements is sufficiently explained by this arrangement, and it does not matter at all whether the motion follow upon the sensation in timely continuity or discontinuity, whether the stimulation be carried through the direct diameter of the spine, or find a medium in an incalculable chain of interruptions along the conducting arches of the cerebrum."

Fritsch and Hitzig (*Ueber die elektrische Erregbarkeit des Grosshirns; Reichert and Du Bois Reymond's Archiv.*, 1870, p. 300), found, "that the excitation of distinct and limited localities (centres) of the anterior convex portion of the brain produces movements of certain muscular groups on the opposite side of the body, whilst the same excitation of portions of the hemispheres, situated more posteriorly, produced no such effect. Thus they found the centre for the muscles of the nape of the neck situated in the middle of the præfrontal convolution (*gyrus præfrontalis*), the centre for the extensor and adductor muscles of the anterior extremity at the extremity of the external end of the post-frontal convolution; and somewhat behind, the centre for the flexor and rotation muscles of the same extremity. The centre for the muscles of the

posterior extremity is also situated in the post-frontal convolution, but more behind and towards the median part than the centre for the anterior extremity. The muscles innervated by the facial nerve are controlled by a centre located in the middle portion of the supersylvian convolution. By still more recent experiments, Nothnagel found that by a circumscribed chromic acid lesion on the surface of the cortex, which penetrated into its substance about one millimetre deep, in a limited locality, which corresponded exactly to the external end of the post-frontal convolution (Fritsch and Hitzig's centre for the muscles of the extremities), the animals had lost the muscular sense in the anterior extremity on the opposite side to the cerebral lesion. In the same way Nothnagel produced the loss of the muscular sense in dogs, in which the effect is still more marked than in rabbits. The described phenomena can be called forth only by producing the lesion in the above-named limited locality, but in no other way. In this locality, therefore, must be situated a central station for the passage of the peripheric sensitive impressions which are produced by the different positions of the limbs. From the fact, however, that after a certain time the animals recover the lost muscular sense, Nothnagel concluded *that the terminal station, or the real centre for the muscular sense, must still exist elsewhere, and that in the above locality there was destroyed only an intermediate station in the tract of the muscular sense.* After a while, however, other ways become opened for the passage of the muscular sense." (W. B. Neftel, M.D., Brown-Séguard's *Archives*, 1873; *North American Journal*, November, 1873, p. 226 *et seq.*)

Thus it seems that even by these experiments, although they prove, contrary to the observations of former investigators, that the cortical substance of the cerebral hemispheres is in close relation to certain muscular groups, the real centres of the muscular sense and muscular motion are still not found. Without doubt the reasons for this are, in the first place, that the points or stations from which certain groups of muscles may be acted upon are quite multifarious; and secondly, that these points are not at all end-points or laboratories in which sensation is converted into motion, but that they serve merely as necessary links for the conduction of certain stimuli to certain muscles. At these stations,

indeed, new passengers may be taken in and carried on the common route, as in the case of the application of a weak galvanic current to these localities, which proves nothing more than that electricity finds a conducting medium from this particular point to another particular point, which, in consequence thereof, contracts, or that these two particular points stand in a more or less direct connection. And when, on the other hand, a lesion of these parts interferes with the normal action of the muscular sense, it shows that afferent and efferent nerves terminate in close proximity; but how and where has not been discovered. But even if we take the statement of Gerlach in regard to the spinal cord as a positive fact, namely, that the ultimate termination of the nerves results in an exceedingly fine plexus, it would merely explain, in a certain manner, the connection between different afferent and efferent nerves, yet would bring us not one iota nearer to an understanding as to the organs in which sensation and volition originate. For as these finest nerve-fibrils have to be considered as the bodily conducting means for the external as well as the internal stimuli, we would still have to look for something *beyond them*, in which sensation and motory stimulus could take their origin. These experiments glean nothing, therefore, regarding the real seat, or rather the real *prima causa* of sensation as well as volition; they merely show that certain connections exist between certain central and peripheral points, and that is all.

So far experiment has reached negative results only. The ground has been cleared, but no harvest reaped; and the question recurring finds no answer, Are there really any separate organs for the origination of sensation and volition within the nervous centres? The nerve-cells which formerly were considered as such, have lost this prestige by the more recent investigations of Deiters and Schultze. If we, therefore, find nerve-cells connected with motory or efferent nerves, we can attribute to them a special motory principle just as little as we can consider the nerve-cells on the other hand as the receptacles and laboratories of sensorial perceptions. And thus, even from an anatomical and physiological point of view, we are driven to the acknowledgment of higher psychic forces as the real *prima causa* of sensation and volition.

What Maudsley has cleverly put together and called the *moto-*

*rium commune* is, in fact, nothing more nor less than the vestiges and consequent mental modifications which have been acquired by means of the muscular sense in combination chiefly with the sense of touch. He speaks frequently of "a region of mental activity," of "motor intuition organized in the proper nervous centres," of "the region of motor intuitions," of "the region of actuation," but he very wisely abstains from any positive pointing to where these regions may be found. "There can be no doubt," says he, "that such a *region* of mental activity exists, and that in it are contained, predetermined and co-ordinated, the faculties of different groups and series of movements." (P. 169.) This broad assertion would sound more correct (physiologically), if he had said, such *regions*, etc.; but whether he use the term region or regions, he has advanced no whit in the psychology; he has but indicated a terra incognita. It appears as if Maudsley made himself guilty here of packing certain concrete phenomena into one abstract "region of mental activity," etc., a fault not less in degree than that of the old-school psychologists, whom he justly charges with this illogical proceeding when they maintain a separate faculty of will, etc.

Neither physiologically nor anatomically is Maudsley's *motorium commune* tenable. Psychologically it resolves into the conative sphere of the mind of which we have spoken. All primary faculties possess, as living psychic forces, a conative quality, that is, a quality ever tending towards action, the sensory nerves serving as "feelers," and the motory as "fangs," or in other words, the primary faculties are constantly striving towards receiving external elements and propagating their excitation in all directions. Thus it happens that in the lower and especially in the vital senses, which do not possess retentive power in a degree sufficient for the development of clear consciousness, external stimulations pass at once in certain channels to corresponding muscular tissue and excite it into involuntary motion, and in this way all the movements which are essential for the sustenance of life, the *functiones vitales*, go on without knowledge or will; it is an immediate transformation of external stimuli into motion, the transformation being effected through channels preformed for this purpose. Herein consist the lowest forms of reflex action. Those on a higher plane,

where reflex actions take place in senses of greater retentive power, appear much more complex, and assume the character of conformability to a certain purpose, or as being done designedly. This of necessity, for in their inmost nature they correspond entirely to those mental forms which we comprise under the name of volitions and voluntary actions. A volition is by no means a simple process. It is a stage of development which the child reaches only at the cost of considerable time. Not until single desires have been formed by many and repeated (especially pleasurable) excitations (§ 26); not until single conative efforts have through many and repeated attempts been conjoined to particular movements of single groups of muscles as the means for the realization of the desire (§ 42), do volitions and voluntary actions take place in the child. Now, as an act of desiring is at the same time an act of conceiving (§ 28), it is plain that consciousness appertains also to volitions. We see, therefore, that in the child the development of volitions goes hand in hand with the development of consciousness. More than once it has been stated that consciousness varies in degree as the different primary faculties are endowed differently with retentive power. From this it follows that volitions of the higher senses must be characterized by a greater degree of consciousness than is attained by those that are measurably lower; that, therefore, all conative modifications of the latter, as long as the higher senses remain undeveloped, must lack more or less of this quality. We need not wonder, then, that the newborn child appears at first as a purely spinal being, or in other words, that its first actions or rather movements appear to be without consciousness. Its higher senses, those primary faculties which are endowed with sufficient retentive power for clear consciousness, have simply not been developed. But this lack in consciousness is only one of degree; even the lowest or vital senses are capable of developing a certain amount of consciousness: this is an inherent quality of all psychic forces. Let the amount of consciousness be ever so faint, it nevertheless is consciousness, just as gold remains gold, if it can be detected only by the microscope. The volitions of the lowest senses differ, therefore, from those of the higher in the degree of consciousness, yet not in kind; and if we bear in mind that the degree of consciousness depends also

upon the number of like vestiges and their excitation, we can easily understand why the so-called reflex actions and what has been termed automatic actions (a term which, indeed, explains nothing), may be classed with full propriety in the conative sphere of the mind. All these movements and actions are going on in strict accordance with the law of equilibration of mobile elements. In the lowest reflex actions external stimuli are at once carried in definite channels to certain groups of muscles which they excite into motion, while higher reflex actions and conscious volitions, properly so-called, originate in mobile elements which may have been to traverse "an incalculable chain of interruptions along the conducting arches of the cerebrum," before they reach their destination. A large amount of mobile elements will, therefore, not only cause movements of a more violent character, but also to a larger extent, the abundant elements spreading in all directions to different sets of muscles. This is proved not only by physiological experiments, which show that strong and continued external stimuli notably induce more violent and extended movements, but also by the psychological fact that strong mental emotions are no less capable of exciting the whole bodily frame even to convulsions. It is everywhere the same psychical process, the equilibration of mobile elements. Shall we, then, any longer look for particular places or cells in the brain, spine, or ganglia where volitions (using the word in its widest sense) originate? Anatomy and physiology have not been able to demonstrate them, and psychology does not need them, for we know that any act of desiring is more or less also an act of conceiving. According to the law of attraction of like to like, the single conative acts unite together and form single volitions, which again, considered as a whole, constitute "the will." It is with pleasure that I here can refer to Maudsley's advanced views in regard to this subject. What therein still is left doubtful and obscure could easily be cleared up by a deeper study of Beneke's psychological works.

#### § 91. THE FEELINGS.

Not the same praise can be bestowed upon what Maudsley treats of under the title of "*the emotions*." The great confusion



which prevails in the old psychology as regards these mental modifications, has not improved under the influence of physiological considerations. Here, as there, the same indistinctness between emotion and passion, feelings and desires. And, although, on page 142, a very proper way is prescribed as to how one might arrive at an adequate account of the emotions, this advice has not been followed out.

The sum and substance of Maudsley's physiological investigations culminate in this: "The recognition of this specialization and complexity in the function compels us to assume a corresponding development in the delicate organization of the nervous structure, although, by reason of the imperfection of our means of investigation we are not yet able to prove a process of such delicacy in these inmost recesses to which our senses have not gained entrance." (P. 124.) This appeal for leniency in judging the shortcomings of physiological researches because of the insufficiency of the present physiological means can apply only to those minds as might unreasonably expect what it is not possible to accomplish. For taking even as granted that the tracing of processes of such delicacy were possible, what could we expect to see? Molecular motion. Would these molecular motions be the identical emotions? Who would dare to assert this? Who could prove it? And thus we would, even then, be just where we started. Although further advanced in the knowledge of the concomitant changes in the bodily substratum during a psychical process, similar to the advancement of knowledge which we have gained in regard to the process of seeing and hearing by the discoveries of Helmholtz and Corti, we would still not have arrived at the origin and nature of our emotions, just as little as by these discoveries we have been made to understand the process of seeing and hearing in its character as *sensation*. It is the fundamental error that taints the entire materialistic persuasion, to consider as *cause* what in fact is but a *condition*. Nobody denies that "an increasing specialization and complexity in the function requires a corresponding development in the organization of the nervous structure," and we may even with tolerable propriety reverse this conclusion and say, that where we find a highly organized nervous structure we may naturally expect a corresponding speciali-

zation and complexity in the function; and still it does not prove that the higher nervous development is the *cause* of the increasing specialization and complexity in the function. It merely states that these two things, higher organization and complexity of function, go usually hand in hand. I say usually, for on the ground of the great difficulty of judging fairly the perfection or imperfection of so complex an organ as the brain, it is not always possible to arrive at a correct conclusion.

Usually, for instance, the presence of numerous and deep convolutions is considered as a sign of higher intelligence. If this be admitted to be a law deduced from a majority of cases, it certainly does not apply to all. And if materialism bases upon it the correctness of its conclusions, we should demand nothing less than its application in each and every instance; a single glaring exception would render these conclusions more or less doubtful. Thus, for example, we find in Henle's *Nervenlehre*, p. 163, the drawings of two brains, one of a young nameless German, and the other of the celebrated Gauss; that of the latter appears so strikingly more simple and poor in its convolutions than that of the first, that Henle finds it necessary to remark: "There are collections of brains of unknown persons which present great richness in convolutions, all the possessors of which we surely have no right to consider as undeveloped geniuses; and on the other hand it would certainly be inadmissible to dispute the legitimacy of the rank which a meritorious man has held during his life, on account of the result of a post-mortem examination."

At most, then, we may say that usually an apparently higher nervous organization corresponds to a higher mental development. But to make this relation, even if it were unexceptional, a relation of *cause* and *effect* evinces a marked defectiveness in logical reasoning. For it certainly does not follow that of two things, which usually or even invariably appear together or follow one another, the one is the *cause* of the other. This coexistence or succession may be a mere relation of time, place, or condition. Thus, for instance, it would be a faulty conclusion if we were to assert that the revolution of the earth around its axis and around the sun were the cause of day and night and of the change of seasons. Would these revolutions and all these changes be possi-

ble without a sun? Is, then, not the *sun* the cause of day and night and of the seasons? Still, without these revolutions, there would be no such changes, because they are the *condition* necessary for their production; yet the sun is the cause of all. A similar relation exists between the bodily nervous organization and mental phenomena; the first are the necessary *condition* for the display of the latter; yet, the *cause* lies deeper in those psychological forces which constitute the human soul.

The psychologist will always thankfully receive the diligent researches of physiology, as they undoubtedly tend to clear up the complex *conditions* under which mental phenomena manifest themselves, but he must earnestly protest against those hasty assertions which make conditions to causes and pretend to possess in physiology the only and sufficient means for the explanation of mental life. Not even the simplest mental phenomenon in its origin and nature can satisfactorily be explained by physiology. How utterly inadequate this science proves for the explanation of higher mental processes, we have a glaring example in the attempt of Maudsley to explain "the emotions" on this basis. It will not do to assert in a general way "that the condition of the nervous centres is of the greatest consequence in respect of the formation of the so-called mental faculties, and the manifestation of their functions" (p. 129); that "the greater the disturbance of nervous element, however produced, the more unstable is its state; and an instability of nervous element, implying, as it does, a susceptibility to rapid molecular or chemical retrograde metamorphosis, furnishes the most favorable conditions for the production of emotion, passion, or *commotion*, as the term was of old" (p. 136); that "the æsthetic feelings are without question the result of a good cultivation, conscious development having imperceptibly become a sort of instinctive endowment, a refinement to which vulgarity of any kind will be abhorrent; they are the bloom of a high culture, and, like cœnæsthesia, represent a general tone of mind, which cannot be described as definite emotion, but in which certain ideas that arise will have pleasant emotional qualities. Reflect, again, on the powerful effects which the aspects of nature produce upon philosophic minds of the highest order. The vague mysterious feelings which such minds have,

as instinctive impressions of their fellowship with nature, traits of that harmonious sympathy with events whereby an indefinite feeling of joy transports them in view of certain of her glories, or a dim presentiment of evil oppresses them under different relations: these are vague psychical feelings that, in reality, connote the highest intellectual acquisition; they are the consummate inflorescence of the highest psychical development, the supreme harmonies of the most exalted psychical tone" (p. 138 and 139); that "the moral feeling betokens an improved quality or higher kind of nervous elements, which ensues in the course of a due development, and which may easily again be disturbed by a slight physical disturbance of the nervous element" (p. 144), etc.

I say it will not do for exact science to flourish with such kind of generalities, and pass them off as analytical explanations of psychical evolutions. Although they appear, if taken with some allowance, tolerably correct in a general way, they do not in the least explain the origin, nor analyze the nature of these processes, and we must, in the name of science, dismiss this kind of physiological talk, as entirely inadequate for solving psychological problems. The psychical processes in general, and the feelings (emotions) in particular, admit of better explanation and of a thorough analysis, as any one may convince himself who studies the new psychology of Beneke, or even reads attentively what has been explained in the corresponding chapters of this work.

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## ARTICLE XXII.—On the Epithelial Origin of Cancer.

By F. FORCHHEIMER, M.D.,

*Instructor of Normal and Pathological Histology in the Medical College of Ohio.*

(Read before the Cincinnati Academy of Medicine, October 18th, 1875.)

BEFORE proceeding to the discussion of our subject, it is necessary that we have a precise idea, as far as this is possible in the present condition of our knowledge on the subject, what a cancer really is. Before the time of cellular pathology, cancer meant any tumor that had those well-known clinical properties, that by

some, even by celebrated pathologists, are to-day considered as the only thing characteristic of cancer. Now, in the study of a developing science, like the histology of growths or tissues, in order to set up a paradigm which shall inclose all structures that come under the same class, it is absolutely necessary that we do not allow ourselves to be prejudiced or influenced by definitions which already exist, and into whose existence factors enter that have nothing to do with the principles of this science. The histology of any structure means the ultimate construction of that structure, such as the means at our hands will permit us to demonstrate. Why not accept this in the pathological histology of any structure? How little satisfaction can it give either to the pathologist or to the clinician to use terms, the definition of which is made up of other terms; the properties and qualities of which we cannot define precisely. Such, with very few exceptions, are the definitions and descriptions of cancer. Fortunately, however, a few have seen that it is necessary to have an accurate definition and an exact limitation of the meaning of the term cancer: the most prominent of these are Cornil, and Ranvier, and Waldeyer. In essence, the definition given by these scientists is the same. A cancer is a tumor, made up of a stroma, which forms the walls of alveoli in which are cells that are separated from each other only by a fluid. This definition is, as will be seen hereafter, one that will satisfy all pathologists, whatever their opinion may be on the origin of cancer. The principal theories on this subject are three, coming, respectively, from Virchow, Thiersch and Waldeyer, and v. Recklinghausen and Köster. There are other theories, but evidences of their probable truth are so few, that they can, for the present, be disregarded with impunity. The theory of Virchow is one which, like all the theories of this great man, has held the field for many a year. In fact, it is to-day held by a great many pathologists, and only by the minority has it been discarded entirely. Having pronounced the sentence, "*omnis cellula e cellula*," he, of necessity, had to accept that the cancer-cells came from pre-existing cells, these pre-existing cells, from which he derives nearly all pathological processes, but especially tumors, he says, are the connective-tissue corpuscles, or their derivatives.

The next theory is one that has the great advantage of sim-

plicity. Thiersch was the first who showed what an important rôle is played by the epithelial cells in the development of cancer, and Waldeyer wishes to have every primary cancer, wherever situated, to originate from epithelium which has existed since intra-uterine life—so that actually the idea of heterology would no longer have any logical existence.

The third theory, which is very ingenious, came originally from v. Recklinghausen, but was developed and raised to its present place by Köster. Here the endothelium is supposed to be the original seat of the process. The idea was, perhaps, prompted by the fact that cancer spreads through the lymphatics, and that, without difficulty, we can frequently see epithelioid-cells in the lymphatics when there is a cancer in the vicinity. Köster treated fresh cancers with a nitrate of silver solution, and found that he got the endothelial drawing on the walls of the alveoli. We will examine into the validity of these theories further on.

Cancers are either primary or secondary. The origin of primary cancer is that which interests us in this connection; that of secondary cancer being, in most respects, an entirely different process. For the sake of convenience, we will divide cancers into those occurring in tissues or organs that are partly made up by epithelium, and into those where there is no epithelium to be found. In this division we will see that nearly all organs belong to the first class, and that only a few, such as the heart, the brain, bones, etc., belong to the second.

Cancers that occur in organs containing epithelium are of two kinds—that is, in respect to the formation of their cells—they contain either flat or columnar cells. In order to study the origin and development of a cancer with epithelial cells, let us take an organ in which glandular epithelium also finds its representative. For this purpose none better than the skin can be found; for in it we can not only study epithelium, but also can study it in its relation to glands—a most desirable arrangement for our purpose. In addition, the examination of the skin presents certain advantages in microscopic technique which need not be mentioned here. For the sake of studying the development of one of these cancers of the skin, it is only necessary that, in making our thin section, we make it as nearly in the direction of the papillæ as possible,

and that we do not only include the centre, but also the periphery of the growth in the sweep of our knife. At the periphery alone we can see how normal skin becomes involved, and how, upon approaching the centre, this disappears and gives way to the pathological process. Having our section, what do we see? At the farthest point from the centre of the ulcer there is normal skin; the papillæ are separated from each other by the usual amount of epithelium, the elevations are of the height generally found, and the connective tissue upon which the cells of the rete mucosum rest, shows nothing abnormal either in quantity or quality. The elevations on the top of the papillæ seem to be on the same level with each other, and the epithelium between them seems to dip down to the same depth. If we move on towards the centre the distance of a few papillæ, we find things materially changed. Here there seems to be more epithelium between the papillæ; not only that, but also the connective tissue forming the elevations of the papillæ seems to be less in quantity than that of the papillæ before studied. The epithelium between the papillæ has proliferated, and has compressed the connective tissue so that it presents the appearance as if diminished. Let us now move on further towards the centre, and we here see that the epithelium, not content with developing in breadth, is also extending downwards, little respecting the connective tissue that had previously formed its limiting line. Now that it has found a way, where only few obstacles are put in its way, it strikes out lustily in all directions, throwing out huge cylinders of epithelium, and making the picture so complex that we can no longer trace the origin of each separate cylinder. This is also the case in the centre, with the addition that there is nothing left of the connective tissue which went to make up the elevation of the papillæ, and all that we see now are epithelial cells, that seem to lie in intimate contact with each other, that can no longer be put into the moulds we knew them to belong to formerly, and whose main direction of growth seems to have changed so that they grow downwards into the connective tissue. The glands, during this process, are far from remaining in a passive condition; their epithelium proliferates, their original contours are lost, they no longer have a lumen, and they assume perfectly gigantic shapes. Let us here

observe that not only the sebaceous glands, but also the sweat-glands take part in this process. In fact, cancers of the skin have been known to originate from a sweat-gland. What does the connective tissue, upon which this foreign substance is impinging, do? *Ubi irritatio ibi reflux*—it is irritated, a new formation takes place; it hypertrophies, or it remains in a passive condition, only here and there containing lymph-corpuscles. The stroma of the cancer, which was an essential part of our definition, therefore, is made up either of the pre-existing connective tissue, or of this tissue hypertrophied. In some cancers there seems to be an antagonism between stroma and cellular substance, giving rise to interesting complications, and in fact sometimes producing spontaneous cure of the cancer (carcinoma atrophicum, Cruveilhier). Now, we having seen how cancer develops in the normal skin adjoining a cancer, is it not logical to draw the conclusion that the origin of the first pathological change was by the same process? Let us say that we cannot admit this. What further evidence can we ask for? Has anybody ever seen the first origin take place as we have here studied the development? These observations have been made. They have been made in warts that have excited the suspicions of the cautious surgeon, and having been removed, have been found to show the origin as we have seen it. A wart is a growth made up of hypertrophied papillæ covered by a common outer layer of epithelium. In fact, in the circumference of skin-cancers we, not infrequently, find papillæ that look exactly like those of warts. When a lively hypertrophy of the epithelium is superadded to the already existing condition, we can readily see that the result must be a cancer; for the distance from the depth of the depression between the papillæ to the highest elevation of the papillæ being already greater than in the normal condition, there being actually an abnormal amount of epithelium, it only takes a little impulse and the cells proliferate into the connective tissue below; thus giving us a perfect picture of a cancer. In the origin of cancer of the skin, therefore, we will hardly find it necessary to take refuge to any other theory but the one of Thiersch.

Now let us look at an organ whose epithelium is principally glandular; the breast, for instance. We have already studied the



process in the sebaceous and sweat-glands of the skin. The process in the breast is the same, varied only by local peculiarities. The glandular epithelium proliferates and throws out sprouts; these in their turn provoke a consecutive hypertrophy of the connective tissue, which, in this gland, is frequently very great, giving rise to scirrhus. Sometimes the connective tissue cuts the cylinders of cells into parts, and then we have alveoli, which seem to have no connection with the glands themselves. The development is the same, even if the pictures vary. We must consider that the original epithelium is not, as in the skin, spread out in one continuous plane, but that it lines tubes and acini, thus adding more complicity, and not permitting us to see everything as clearly as in our first specimen. In the hollow organs of the body the epithelial theory explains the whole process as readily as it does on the skin. That cancers spread by getting into the lymphatic system it certainly needed no microscope to demonstrate to us. That we do find the cancer-cells in the smallest ramifications of the lymphatics the microscope has shown us, but that these cells have their origin there and are not from without, Köster and his adherents have not been able to prove—certainly not for cancers containing epithelial cells. Even if we would not take into consideration the pictures we have studied, we would come to this same conclusion. It has now been nearly settled that epithelium, in the repair of tissues, *i. e.*, in its regeneration, always comes from pre-existing epithelium. When there is no longer any doubt on this score, everybody must admit that cancer containing epithelial cells, and Waldeyer and his adherents only call that cancer which contains epithelial cells, can only come from epithelium. Besides this, does it not take something more than expressions like “infectious tumors” and “epithelial infection” to explain how in one case connective tissue corpuscles or endothelial cells produce columnar, in the other flat cells, and, at that, with such regularity that rules like the following have been put down: Cancers down to the cardiac end of the stomach contain flat, beyond are made up of columnar cells. Furthermore, the flat-celled cancers are only found where there are pre-existing flat cells, and the columnar-celled where there are columnar cells. The exceptions to this rule are so rare that we can safely venture the opinion, that in

these cases there must have been some abnormality of epithelial arrangement coming from intra-uterine life. We can certainly not explain this regularity of development by any other theory except the epithelial.

Let us now go to the study of cancer in organs having no epithelium; the spleen, the bones, the brain and vessels. Since the last ten or twenty years, primary cancers of these organs have become rarer and rarer in the literature of cancer. Tumors which formerly were considered as such, have been definitely fixed as sarcomata, and a primary cancer of bone, for instance, has become an *avis rarissima*, requiring the highest microscopical authority to fix it as such. In view of this seldom occurrence, we are justified in accepting that which was first pronounced by Thiersch; that in cases of primary cancer of these organs there must have been some anomaly in foetal development, leaving epithelial cells where there ought to be none; as in the case of dermoid cysts. The subject, as yet, is too new to have received universal attention; but already one positive case has been reported by Czerny, in which a cancer developed from a congenital sacral tumor. It certainly also speaks for this theory that so few proofs are brought up against it; for, as I have said before, only the minority of pathologists have given up the views of Virchow, in this connection, and men examining tumors daily would only be too glad if they could bring proofs against a theory not in accordance with their own views. This point is one that will take years and years to settle, and for the present we can only hope that also, in this respect, the theory will explain matters as satisfactorily as it has done elsewhere. If this explanation should not be verified by facts, we will have to fall back upon one of the other theories, to each of which there are so many objections. At all events, we may say this for the theory of Waldeyer, that it is the simplest; that there is but one objection that could be raised to it; that, for the present, there are no positive proofs against it; and that it explains the great majority of cases.

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**ARTICLE XXIII.—China in Diseases of the Eye.**

BY GEORGE S. NORTON, M.D.

QUININE has for years been a favorite remedy with the old school in diseases of the eye, as well as in other troubles, especially in those cases dependent upon an impoverished condition of the vital powers. It is employed by them chiefly as a tonic, and thus indirectly aids in the treatment of ophthalmic disorders, though it is rarely used as a direct remedial agent. We, however, find in the *Transactions of the American Ophthalmological Society* for 1870, a paper by Dr. Prout, who recommends the use of dry quinine dusted into the eye, in superficial inflammations of the eye, especially when very severe in character, as in severe cases of pannus from granular lids with tendency towards suppuration, various forms of keratitis, conjunctivitis, etc. Wecker and others have also used it in severe cases of ophthalmia.

In troubles of the eye due to malaria, or when of an intermittent character, it is their chief reliance.

In homœopathic practice the China or Cinchona has been most frequently employed, as that is the preparation most thoroughly proven, though we sometimes use with benefit the active principle quinine, either as the muriate or sulphate.

This remedy has been successfully employed in a great variety of eye troubles, and the indications for its use are in many respects similar to those which govern its selection by the allopathic school, though these indications are wholly homœopathic whether admitted or not by the opponents of our practice. It is especially called for in disorders of a malarial origin and intermittent character, also in those affections where there is impairment of tone occasioned by the loss of vital fluids. In these few words are summed up the chief indications for the administration of this drug.

We will now speak briefly of the various affections of the eye where China has proved curative.

A case of scrofulous ophthalmia marked by a pressing pain in one spot at the inner and upper border of the orbit, extending to the nose, and sometimes into the lids closing it, and of an inter-

mittent type coming on every evening about eleven o'clock was cured by China. (Caspari.)

In ulceration of the cornea dependent upon malarial causes or anæmic conditions, especially where the iris becomes complicated (kerato-iritis), we have here an excellent remedy.

It is very useful in some cases of iritis, when caused from the loss of vital fluids, as in one case reported by Arnold, where it came on from the loss of blood after confinement. Again it cured a very severe attack of iritis (probably kerato-iritis) in the right eye from inoculation with gonorrhœal virus, where the photophobia was intense, extending to the other eye, with severe constant pain in the forehead.

In intermittent ciliary neuralgia it has proved very beneficial, as, for instance, when there was painful pressure and drawing in the forehead and temples every day at 10 A.M., lasting some three hours; general excitation during the attack, and depression after; *every touch* or motion aggravates the pain (Raue); also when the pain has been excessive, as if a knife were thrust between the orbit and ball, and moved about in the orbital cavity as if to scoop out the eye, coming on at 8 A.M., and continuing till 2 to 3 P.M. (St. Martin.)

Hemeralopia with no other abnormal symptoms is on record as cured.

Great benefit has been derived from the use of this drug in several forms of amblyopia, especially when due to venereal excesses, masturbation, or to loss of any fluids. Caspari reports as cured the following case of amblyopia, consequent upon venereal excesses and intoxication: Only large objects could be distinguished at six paces; the letters run together and look like black spots on a white ground; pupils dilated and sluggish; fundus of the eye hazy; cornea dim; vision better in the morning; associated with loss of strength, trembling of the limbs, weak digestion and uneasy sleep. Within four weeks by the use of China<sup>1 and 2</sup> was able to read usual print. Dr. Stens also reports a case of amaurosis, associated with spinal irritation; she suddenly became blind in the right eye, and soon after in the left. In this case most violent pain in the occiput extending over the head into the eyes, with great

sensitiveness of the spine and swollen spleen, were the characteristic symptoms present. China<sup>1</sup> produced first an aggravation, followed by a sudden return of vision, first in the left eye, afterwards in the right.

We have now given briefly the chief clinical indications and verifications for this great remedy, which led Hahnemann to the discovery of our beloved branch of medical science. It will be seen that, though it may be adapted to a variety of eye disorders, still its application has been limited, much more than its importance demands.

Before closing this article we must speak of the use which has been made of the well-known alkaloids, muriate and sulphate of quinine.

The muriate of quinine, in appreciable doses, has been used with great success in controlling the severe neuralgic pains occurring in iritis and various other diseases of the eye. It is often called for in ulceration of the cornea when the iris has become affected, and we have *severe pain*, either in the eye or above, and which is *periodic in character*, especially when accompanied by chills; also in ulcers found in the course of pannus with much pain in the morning. The intensity of the pains and their intermittent character will furnish our chief indications. We are also led to think of this remedy at certain seasons of the year, as in the early spring, or at times when malarial influences are especially prevalent, and seem to be the exciting causes for the severe ciliary neuralgias arising in the course of various ophthalmic troubles. This form of quinine is more employed at the present day in our school than any other preparation in the treatment of diseases of the eye.

The sulphate of quinine has been more used by the old school than by us, and an interesting case of intermittent strabismus occurring in a child, who would squint one day and be entirely well the next, which continued for some time, was cured by the use of this drug in the hands of an allopath. Herschman reports the following case which came on after bathing: The conjunctiva was injected, lids red and swollen, pupils contracted, lachrymation, extreme photophobia, tearing heat in the orbit and headache, with thirst and fever; all appearing *every second day*. Chin. sulph. cured very speedily. Berridge found Chin. sulph.<sup>200</sup> very useful

in a patient who could only see objects when looking at them sideways.

In this article we have endeavored to give only the clinical application of China as gathered from various sources without regard to its symptomatology, although that is chiefly contained in the description of the above cases, and can be easily found by reference to the *Materia Medica*.

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#### ARTICLE XXIV.—Fragmentary Proving of *Euphorbia Hypericifolia*.

BY E. M. HALE, M.D.

IN volume i, of the fourth edition of *New Remedies*, I mentioned this indigenous medicine as a remedy for dysentery. I have had no experience with it except in one instance, when I gave it in a bad case of infantile dysentery; it seemed to have a good effect, but as we have no symptoms to indicate it, I did not feel like giving it further trial.

Dr. True has given us a few pathogenetic symptoms,\* which may throw some light on its action. He drank one and a half pints of an infusion made by infusing half an ounce of the dried mature plant in a pint of water, and shortly after, he says: "*I experienced a sensation of fulness in the frontal part of the head, and also through the lateral portions, with headache similar to that produced by Macrotys (Cimicifuga), but not so severe. The pain seemed to centre at the crown of the head, but there was a feeling of heat above the eyes that was very characteristic. There was no ringing in the ears or vertigo, but the head symptoms were of that degree of positiveness, that it was with difficulty I could fix my mind on anything else but the headache. The maximum of the feeling was in about two hours after taking the medicine, and it subsided in about three and a half hours, and was succeeded by a feeling of languor and drowsiness which lasted several hours, but*

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\* *Eclectic Med. Jour.*, 1875, p. 260.

no sleep was produced by it. While the head symptoms existed there was a *feeling of unpleasant fulness and oppression at the epigastrium*, and I was compelled to take physic the second day for the *constipation* it had caused."

Dr. True states that this epigastric oppression was not due to the bulk of the infusion drunk, because he got the same symptom from two drachms of the tincture. He very correctly thinks the drug is a *cerebral stimulant*. He considers it "secondarily sedative to the brain and sympathetic nervous system," which may or may not be the case. It would seem that it causes congestion of the stomach and liver or portal system, at the same time that it congests the brain. This congestion is not active, like that of Belladonna, but more like Cimicifuga or Chelidonium. It is evidently very different in its action from *E. corollata* or *E. officinalis*, for they are primarily active "hydragogue cathartics." The primary effect of this species seems to cause a torpid congestion, perhaps venous stasis of the abdominal viscera, with constipation. It is, probably, primarily indicated in dysentery which has been preceded by constipation, and secondarily for passive or chronic watery diarrhoea.

Dr. True claims to have cured many cases of cholera infantum, but I should not dare to try it in acute cases for fear it might precipitate cerebral congestion, which it evidently did in one of Dr. True's cases, which ended fatally.

In the lower dilutions I predict it will prove a valuable remedy in actual or impending dysentery with the symptoms I have italicized above.

Dr. True incidentally mentions that this plant is a valuable remedy in *gonorrhœa*. He says, "The tincture, as an injection in gonorrhœa, beats anything I ever saw." He prescribes the tincture made with dilute alcohol, and orders it used "full strength." He claims to cure the disease in a week! One wonders what would be the effect of using the dilute alcohol without the Euphorbia? Perhaps it would cure as quickly. The proper method of testing the virtues of this plant in gonorrhœa, would be to order injections of the *infusion*.

This plant evidently deserves further investigation both by provings and cautious clinical experimentation.

**ARTICLE XXV.—Scarlet Fever.**

BY P. P. WELLS, M.D.

IF *names* are not *things*, their protracted use may ultimately impart to them the importance which belongs only to the things they are supposed to represent. This is only too true of the names we have applied to diseases, for our convenient interchange of ideas concerning them. We have given a name to certain generic phenomena, and this comes by use to represent these in whatever combinations they may appear. The name is accepted as expressing identity of condition, and therefore uniformity of curative relationship, regardless of the presence of associated facts, which, when properly investigated, may disclose new characteristics and new relations. The misfortune is, the name in so many cases is received as sufficient, and investigation is neglected. The name is assumed to represent, when the generic elements of a case are thus complicated, that which it really does not. And proceeding on this false assumption in administering for the cure, of necessity wrong means are often selected, and the result is a partial success or total failure.

If this be true of individual cases of disease, it is still worse of groups, or epidemics. It may be sufficient for the ordinary purposes of life to call a member of such a group "hooping-cough," the object being to convey to some friend of the patient an idea of the nature of his malady. Both he and the patient think they understand this, and they are satisfied. And so far the name is well enough. It is to this extent and for this purpose useful. But if to this name be attached the idea that that which it expresses is an identity, in all cases, which is to be met by a given curative, *Drosera*, for example, it is not only not useful, but positively mischievous. Such an idea in relation to this affection was once quite prevalent. It was believed by Hahnemann and many of the earliest and best homœopathists. But it was not true, notwithstanding. So far from it, that it is confidently believed *Drosera* has *cured* but few cases of hooping-cough in the practice of homœopathy in this country. In the practice of the writer, extended over more than thirty years, it has in a very few cases mitigated the severity or frequency of the paroxysms, but in no



one, that he now recollects, has it effected a complete cure. It has not been for want of a trial. The great confidence in the drug expressed by Hahnemann and his early followers, and their great success with it in the treatment of this troublesome malady, led, in his early practice, to its frequent use, till frequent disappointments caused him first to question the genuineness of the drug employed, and to resort to the use of different specimens; then, the result being still unsatisfactory, to its use in different potencies, from the lowest to the highest, and still the cures were not realized. The question was unavoidable. Why are not the same successes realized from the use of the drug here as are claimed for it in Germany? The fact had been abundantly proved that *Drosera* was not a specific for whooping-cough in Brooklyn. It was declared to be so in Germany. Whence the difference? The honesty and capacity of the German witnesses were of the highest character. These could not be questioned. The drug used was obtained from the same source and therefore was presumed to be the same. There must then be a difference in the disease, arising from the difference of climate, or the modifying influences of different social and domestic life, in the two countries; or the morbid cause producing the different epidemics was not an identity. It was different in its nature in these different visitations, and therefore, though it still produced the generic phenomena we are accustomed to recognize as whooping-cough, these came, in different epidemics, accompanied by other phenomena, by which each was characterized, and in which it differed from the other. Was not here the reason why *Drosera* cured in some instances and failed in others? A careful and prolonged observation has convinced him that this is not only true of whooping-cough but of all epidemics. That in them all, that which we call by the same name when met in groups, in successive years, though exhibiting the same generic phenomena, are not the same in their intimate nature, and therefore not in their curative relations. This is shown in the case which we have used for our illustration. Why would not *Drosera* cure for us as well as others? A careful examination of the symptoms of the drug and the disease showed clearly enough the reason why. Though there was a marked similarity in the generic phenomena of the disease and some of the symptoms of

the drug, there was none whatever between the accompanying symptoms of these generics and the symptoms of the drug, and hence the failure.

This is the truth in relation to all epidemics. Though called by the same name, they are not, as met in successive visitations, identical. Indeed, in those elements by which they are related to curative agents, they are quite different in different years, and no fact is now better known than this, that the remedy which has been almost uniformly successful in a previous epidemic may be without value in that which next follows it. This was not at first understood, and hence the hasty generalizations of the earlier homœopathists, one instance of which, we have found, led to a conclusion not sustained by subsequent experience. This is equally the case with other diseases for which they supposed they had found specifics for all time. They had not yet appreciated the extent of that strict individualization which constitutes the very soul of the homœopathic system, and which is no less a necessity to success in the treatment of epidemic than sporadic diseases; in those from specific no less than in those from general causes.

More than this is true. Diseases which appear for the most part as epidemics, and proceed from specific causes, though retaining so much resemblance of their generic phenomena in their successive visitations as to be still called by the same name, are nevertheless subjects of changes in these, from epidemic to epidemic, till there is finally but small propriety in calling the recent disease by the same name as the ancient. It has ceased to be the same even in the general manifestations which were the foundations of its classification, and *a fortiori*, has no longer the resemblance in its specific elements to those characteristic symptoms of drugs which once gave to these the relation of curatives to the disease, and which they sustained so long as this resemblance continued, and no longer. Hence the necessity of carefully studying each epidemic in its elementary characters, just as we would if we were investigating a new disease, never before seen, named, or prescribed for, if we would secure for our practice the best possible results. It is only after such a study that we can know what is the remedy for this individual case. For it is well to know that epidemics have their characteristics, by which they are

related to their curatives, as individual cases of disease have. When these are discovered and understood, the key to the control of the epidemic is in our possession, and the cure of the members of the family group is almost a matter of no difficulty. It is only to find the drug, the characteristics of which are like those of the epidemic, and the cases successively treated by it yield to its power with almost uniform certainty. This has been taught by some of our colleagues, and especially by Hering, and its truth demonstrated, in their practical successes, for many years. It is not stated here as a thing which is new, but as a truth, the practical knowledge of which is not so general as its importance merits.

We have made these observations on the nature, study, and treatment of epidemics generally, to prepare the way for the question which we now put, Why is the supposed homœopathic treatment of what is called "*scarlet fever*," less successful now than it was in the early history of our school? That it is far less satisfactory than it was thirty years ago, needs no argument to prove. An appeal to the memory and candor of physicians who have an experience of so many years of practice is all that is necessary to establish this truth. Thirty years ago a fatal case of scarlet fever, that had been intelligently treated in accordance with the instructions of the early homœopathists, was a rarity. Now such cases are believed to be far more common, though the treatment has been but little varied. Why is this?

An intelligent answer to this question involves a consideration of the two powers which enter into and compose the elements of all practical attempts to cure the sick by drug agency, viz.: the disease, the facts which compose it, and the circumstances and conditions in which these are developed; and the drug, the powers by which it affects the actions of the living organism, and the resemblance of its effects on these actions to the phenomena of natural disease. Of these elements, it will be seen at a glance, that one class is, in its nature, subject to modifications, and in practice is found to present constant changes, more or less important, resulting from impressions of circumstance or condition, either on the nature of the morbid cause, or on the vital forces and susceptibilities of the patient, while the other remains a fixed quantity, or is only subject to such differences of power as result from differ-

ent degrees of purity in the samples of a given drug employed. If this be so, that while the disease is, in its nature, subject to constant change, and the drug at the same time remains ever the same, it is evident that to continue to treat a disease, because called by the same name, by the administration of the same drug, for a series of years, must of necessity often result in such violations of law as can only be followed by want of success. It does not avail that the drug was once homœopathic to this disease, for this has so changed, in the elements by which it is related to curatives, that this relation no longer exists.

In the introduction to *Belladonna* (*Reine Arzneimittellehre*, b. 1, s. 15), Hahnemann has clearly stated what he understood by the term *Scharlachfieber* (scarlet fever), for which he claimed to have found not only a specific curative, but a prophylactic as well. He says this is the "true erysipelatous, smooth (*glatte*) scarlet fever, as described by Sydenham, Plencitz, and others," and remonstrates against the objections to the claim of his prophylactic, that it did not protect against attacks of *Rothe Friesel* (miliary rash), which appeared in Belgium in 1801, and which he says is quite a different affair, and requires to be treated with very different remedies. He complains that the distinction was not made by those who ridiculed and rejected his curative and protector. If it be now objected to the so-called homœopathic treatment of what is now called scarlet fever, that it is sometimes unsuccessful, and this more frequently than formerly, the reply is not difficult. Indeed there are several, either of which is sufficient to meet this objection fully. It is quite enough to state the fact that there has been no method of treatment found which does not sometimes fail of curing this truly formidable malady, and that this, which is called homœopathic (we shall by and by try to show that sometimes it is not), is as often, or oftener, successful as other methods.

But there is another. That this, which is now often and generally called scarlet fever, is not the disease which Sydenham described and Hahnemann cured and prevented. That which is now generally met in practice, and which passes under this name, is quite different in its nature, elements, and curative relationships, from the smooth scarlatina of Sydenham. This difference has

been increasing from year to year, till now it is one of the rare occurrences, that one meets a case of what Hahnemann calls "*true scarlet fever*." The disease has been assuming more and more each year the character of "*Purpurfriesel*" (miliary rash), which he says scarlet fever is not, and the remedies required by the one do not cure the other. Now while this is true in relation to the disease, what are the facts in relation to the treatment? Has this been changed to meet the changing requirements of the case? If not, then however frequently this may have failed of success, homœopathy has not each time, then and there, failed in it. Homœopathy is, in its treatment of this as of all other diseases, the applying of a remedy to a given case, the known pathogenesis of which is like the elements of this case, and never for a given name the administration of a supposed specific. Now the changes in the disease we are considering have been so gradual that the same name has been continued, and is still in use, which years ago was given to a group of phenomena now rarely met, at least in this neighborhood. While this change has been progressing, the treatment has been dominated by the name, and has remained substantially the same in too many instances, and if in these circumstances there have been failures to cure, they have been only what should have been expected from this, as well as from any other violation of the law of cure, which this treatment certainly is, whenever the remedies employed have not in their pathogenesis the likeness of the characteristics of the case treated. Whatever the treatment of such cases may have been called, certainly homœopathic it was not.

It is very common to hear from practitioners of both the old school and the new the declaration—"We do not treat names"—"we treat"—what? The old school claims to treat "diseases," the new, sick men and women, guided in this by the elements of diseases—their symptoms. In too many instances the claims of both are equally false. The truth is, in the great majority of cases, both have been concerned, chiefly if not entirely, with the *name*, notwithstanding this disclaimer. The case is "scarlet fever," has been the thought, and this requires so and so, and in this way it is that names come to take the place of things. It may even be said with truth, so gradual has been the change that

has crept over this, which we still call "scarlet fever," that it presents no longer the simple elements of true scarlet fever, but a mixture of these with the "*Purpurfriesel*," or miliary rash. The case has been recognized as scarlet fever at the outset, and this has saved all trouble of observation and investigation. These were both troublesome and useless, because from the beginning it has been known that this malady required for its cure Belladonna and little else; and Belladonna has not been wanting, whatever has been the success.

Now against all this style of practice we enter our solemn protest. It is wholly unwarranted by any authority or success. It is unscientific, puerile, and hazardous. It can only proceed from carelessness, indolence, ignorance, or general incompetency. That, in the case of the disease before us, it has become common, is explained, perhaps, by the impression, too general, though false, that such a thing as a general specific for a group of generic symptoms is possible, and that such a specific for the group called scarlet fever has been found in Bellad. Or if this were not strictly true, it was so nearly true, that at any rate the best thing to do in the beginning was to give it, and continue to give it, till it should cure or fail. And if it did fail, then there was the comforting assurance of the specific idea, and the easy conclusion, if the specific failed, then, of course, all else would have failed. Would it not have been as well, instead of this, to have investigated the case, and to have ascertained before giving the drug whether it was appropriate to the treatment—whether it was required by the law of cure? If not, then it could not be specific for this case, though it had cured every other called by the same name, in all past time.

What has been, and is still, the most common prescription at the beginning of the treatment of scarlet fever? We hazard nothing in saying that in a great majority of cases treated by the practitioners of our school, if not in nearly all of them, the same prescription is repeated, and this with very little reference to the facts disclosed by a critical examination of the case and a reference of these to the requirements of the law of cure. The current method is to give at once the once supposed specific, Belladonna. Or, if there be exceptions to this, oftener than otherwise, it will

be found that Aconite has been given, either a few doses as a preliminary compliment to the high febrile reaction of the initiatory stage, or, more commonly, this is alternated with the specific. And now who, in all the cases treated in the last thirty years, has, when so prescribing, given himself the trouble to inquire why Bellad. or Acon. was given rather than Ammon. carb., Stram., Rhus tox., or any other drug which may or may not have shown in its pathogenesis some form of efflorescence of the skin, or a red rash? Who of all these has given to himself a better reason for what he was doing than this,—others have done it before? And how shall such a practice be defended from the charge of the grossest empiricism? In what, in those cases where the likeness of the symptoms of the disease and drug were wanting, is such a practice better than the grossest quackery?

Extreme cases are better illustrations of a truth than those composed of less striking elements. Let us take such a case. Suppose a child, while at its play, is suddenly seized with vomiting, and this is immediately followed by violent pains in the head, intolerance of light, desire to lie down, sudden and great prostration of strength, vertigo, comatose sleep, insensibility, convulsions, here and there on the skin may be found patches of redness with raised points, more or less prominent, while the intermediate spaces are of a dull opaque appearance, the whole having a marbled look; the redness is evanescent, it goes and comes again, or this may, from the outset, assume a purplish hue, and when the blood is forced from the skin, by pressure of the finger, the color is slow in returning; and after an interval of from ten to thirty hours death closes the scene. The case has been treated by a homœopathist, and what have been the remedies he prescribed? Has not Belladonna been his chief reliance? If he has given any one medicine in such cases, before and oftener than any other, has not this been it? Why? Let him bring this question home to his conscience, and answer it in the light of the law of cure, before he ever, in a case like this, pursues a similar practice again. We repeat—why did he give this drug? If he be a practitioner who, before prescribing for his patient, is accustomed to have some reference to the symptoms of his case, he has seen headache, intolerance of light, vertigo, sleep, insensi-

bility, convulsions, redness of the skin—and has not Belladonna all these? To the careless observer, yes. To the careful student of the *Materia Medica*, no.

The whole condition of the patient, in the case imagined, and that of the brain in particular, through which the attack from the outset threatens life and so rapidly destroys it, is altogether unlike that produced by this drug. The pain, intolerance of light, vertigo, insensibility, sleep, convulsions, etc., which characterize the action of Belladonna on the cerebral apparatus find their counterpart in the symptoms of acute inflammations, for the most part of the membranes of the brain, or, it may be, of its substance, though this is more rare. In the case before us the brain is not suffering, as is often thoughtlessly supposed, from inflammation, but from toxication. Not from excessive but deficient action. Indeed, in all its characteristics, it discloses a state as nearly the opposite of that produced by the action of this drug as can well be imagined. It is not inflammation but paralysis. These symptoms, to be sure, are nearly all named in the pathogenesis of Belladonna, in nearly the same words we have used to state them. But when produced by the drug they are of a *different quality*. And they have been selected, in part, in addition to the illustration they afford of our present subject, to give opportunity for insisting on the duty of studying symptoms in their *quality*, because in this is often found the distinction between the symptoms of different drugs, which are recorded in nearly the same language. We insist on this because it is essential to an accurate and successful practice. This duty, if faithfully discharged, would have saved the long succession of false prescriptions in this class of cases, which have been so uniformly followed by fatal results. For we believe we may safely affirm that this drug has never yet cured one of the hundreds of such cases in which it has been employed. And these symptoms have been given in order further to say that the similarity in the symptoms of the drug and disease to be sought and found in the process of prescribing, is not a *similarity of verbal expressions* used by the patient and the drug provers, but of a physiological or pathological state to be discovered only in the resemblance of the characteristic symptoms of the drug and the disease. This verbal similarity has



often imposed on the inexperienced, though it is of little value as a guide to the selection of curatives. For the cure of a case with symptoms like those we have given, it is not enough that a drug be found which has produced symptoms which have been recorded in words which may be used also to describe those of the case. This must be true in addition,—it must have added to its record that these symptoms were characterized by *torpor*. In this class of cases, met too often in practice, a representative of which we have endeavored to present in its symptoms, this is the dominating feature, which, in the selection of a curative, if one can indeed be found for it, can in no wise be ignored. We say if a curative can be found, for it is but too notorious that these cases generally die. Are we therefore justified in the conclusion that this is a necessity inhering in such cases, and that we may therefore be satisfied in sitting down to a routine of practice which has little to present us in its history but an almost unbroken list of failures? Certainly, till after our utmost endeavor, we have no right to be content with such successes, or rather want of successes, as our past history has put on the record.

Scarlet fever, as it is still called, and as it is now met, stands in the list of those acute diseases most to be dreaded in practice, as well for the fatality which follows it as for the power it possesses of bringing into activity whatever of latent miasms may exist in the patient attacked, the workings of which, when so aroused, we are called to meet under the name of "*sequelæ of scarlet fever*," a proper treatise on which is still a desideratum in our literature. At present, however, we have to do with the fatality wrought more directly by the action of the scarlet fever poison itself. If observed with only a little care, it will be seen to be destructive of life, so far as its effects are localized, chiefly through the brain and throat. It may be doubted, indeed, whether those cases which fall so suddenly before the attack, that dissection reveals no changes in the appearance of these or other organs, from the state regarded as healthy, are exceptions to this rule. In our attempt at a further consideration of the subject we propose to treat it with this view, and to consider those cases which prove fatal through assaults on the brain as presenting two classes: First, those which are characterized by symptoms of

toxication ; and second, those which present more distinctly signs of inflammation of the brain or its membranes ; third, those which are marked by the localization of the disease more especially upon the throat and parts adjacent.

This division is made solely with reference to convenience in treating of the disease in its relation to remedies. For though the problem before the prescriber is always one and the same thing,—to find the curative for the given case—and though this problem is, on the one side, primarily composed of two elements only,—the patient and the action of the morbid poison—the first of these elements is so subject to change from hereditary miasms or accidental causes that the results of the action of the second, though it may or may not be an identity, are ever varying. Though in this, as in every other case of disease, we have to do with the *sick man* in our endeavors to cure, and not with a *thing*, the result of the action of this morbid poison on him, which we call *scarlet fever*, still the *sick man*, by his hereditary or accidental constitution, is liable to show almost an infinitude of variety of results from the action of this poison upon him. And hence, in this, as in all other diseases, the necessity still exists for that strict individualization which we ever insist on when prescribing for the sick. It is in the peculiarity of these results, in an individual case, that we are to look for the phenomena, the counterpart of which is to be found in the pathogenesis of some drug, before the practical problem of a curative can be solved. So that when, for convenience, we divide the consideration of our subject into classes according to the characters or the seat of the localization of the more important phenomena of the case, we are not to be understood as regarding these local phenomena *as the disease*, or in any way giving countenance to the silly idea that “*the disease has gone to the brain*,” as is often said, or “*to the throat* ;” but as cases modified by these changing elements demand different remedies, it facilitates the finding of the true one in a given case if we can properly narrow down the limits of the inquiry among drugs by such a classification as is founded on the more important phenomena of cases to be prescribed for.

To this extent generalization is legitimate. But if the process of examination stops here, if it do not pass to the individualiza-

tion of each member of the class to be prescribed for, then, for all the purposes of finding the true curative, the classification is not only useless but mischievous.

It must then be apparent, we believe, if these views of the disease and its relations to remedies are correct, that the whole idea of finding a *specific* for the whole *family* of scarlet fever is a sheer absurdity, and the practice, so general, of treating almost all cases, at least in the outset, regardless of their individualities, with one drug, is wholly unworthy of a school of medicine which claims to be a school of individualization, and that its practice is one of specifics, based on this, in each individual case. And more than this must be clear, that this practice, if persisted in by the members of our school, must be a fraud on the public, and a crime of no less gravity than the persistence of practicing on false pretences—a crime, in comparison with which false pretences in trade are less reprehensible, in the ratio that property is less valuable than life.

In the first class, in the division we have made of our subject, we include those cases which suddenly sicken, and, generally, suddenly die, with marked symptoms of suspending, and at last suspended, cerebral functions, early in the history of the case. We allude to these cases as a class partly to bespeak for them a careful study by the members of our school, that if possible a method of treatment may be found which may diminish its present almost certain fatality. We have already shown the worthlessness of the current routine method. What we have said of this, if it has any truth, applies with especial force to the treatment of this class of cases. In making these remarks we have had these cases especially in our mind. The following is no fancy sketch, but a sad fact :

A child of seven years, in school, in perfect health, was seized with pain in the head so sudden and violent, that she gave a sharp outcry, soon vomited violently, which only increased the intensity of the pain in the head ; she was immediately removed to her home, in a few moments became drowsy ; this soon passed into a deep sleep, and this deepened into a coma, from which there was no rousing, and then came convulsions, paralysis, loud, difficult respiration, with hissing-blowing. The skin suddenly be-

came hot, with red patches here and there, and in these were slightly raised red points, so that these patches had a marked roughness to the feel; the intermediate spaces had an opaque, dull aspect, giving to the whole a mottled or marbled appearance. As the case progressed the red spots became dark, approaching to purple, and then livid; the extremities became cold; and the restlessness, which had been extreme, was only quieted by the profound coma and death, which followed in sixteen hours after the first attack.

This case is a tolerably fair picture of its class. It was treated allopathically. Similar cases treated according to routine homœopathy scarcely succeed better. Cases like this, subject to modifications of some of their symptoms, are met in all epidemics. One of these, not infrequent, is: the eruption in its early appearance is dark-colored, and soon becomes livid, slowly regaining its color when this is expelled by pressure. This is quite significant, in any stage of the disease, and, if occurring early, with rapid and feeble pulse, threatens the worst results. Now what similarity have the recorded symptoms of Belladonna to this whole picture? None. Or if in some of the symptoms there be an apparent resemblance, this is certainly only apparent, and not in the least real. For example, the pain in the head. This, with Belladonna, if it be violent, to the degree witnessed in this little patient, is accompanied by *excess* of activity in the arterial circulation, especially in that of the head; the pulse is not only quick and sharp in its beat, but is hard under the finger; the accompanying nervous phenomena are those significant of *activity*—the exact opposite of those in this case, where all were indicative of *torpor*. The drowsiness and coma of Bellad. are accompanied by, if not the result of, active cerebral congestion, and the same is true of the convulsions it produces. The opposite is true of cases like that given above,—the congestions are passive, the result of a *sluggish* and not of an *active* circulation. Paralysis from the action of Belladonna is the result of pressure on the brain, either from the accumulation of a continuously increasing congestion of this organ or of its membranes, or of accumulated serum in its ventricles and between its membranes, in the effusion of which a previous congestion has terminated. Paralysis, in this class of

cases of scarlet fever, is only one of the manifestations of that loss of brain-power in general, the sum of which is at once expressed by the term "paralysis of the brain." The loss of power in distant parts is the result of loss of power in the brain itself. Its functions are paralyzed, each perhaps in a different degree, and the loss in different functions appearing successively, partially, and progressively, till in the final sum are swallowed up the whole of the forces of life.

Now when called to treat a case like this, of which we have presented the outlines from life, the first inquiry to be answered is, what remedy, now known, in the *Materia Medica*, presents, in its recorded pathogenesis, symptoms most like to the group before the prescriber? What one of them all strikes at the central forces of life, paralyzing them, and extinguishing their functions progressively one after another, till all are lost, not by that great terror of the old school, inflammation, but by a palsy which knows no relenting, and yields to no check, till all living functions have ceased, as they do in the all but uniform history of these cases? If there be one remedy which has been found to act in this manner more than another, this is the one most likely to prove a curative in these cases. If there be a class, then from its members is the curative to be selected. With this view of the case it is quite natural the attention should be first directed to Hydrocyanic acid. This remedy attacks the living forces at their centre, and suddenly extinguishes their sum. In this respect there is a marked similarity between the action of the two poisons. There is a farther resemblance. The acid destroys life by *paralyzing* the nervous centres. It is true, so far as we know of the effects of the drug, that with this the process is *sudden*, and with the whole, simultaneous, while with the morbid poison the process is more gradual, and is accomplished by successive steps. In this the two poisons are dissimilar in their action. But it is to be remembered the sudden fatal effects of the drug, now known, are from *massive doses*. That it is but partially proved. That when this process has been carried farther, with potentized doses, there may be such results developed as will establish new curative relations. And where the general resemblance of the mode of attack of the two poisons is so striking, it may not be unreasonable to

suppose that there may be in the undiscovered symptoms of this partially proved remedy, resemblances to the special symptoms of the disease which will bring it into a proved curative relationship to this most formidable malady. If it be objected that this is altogether hypothetical, and therefore unsafe as a practical suggestion, the objection will be at once admitted as valid. The basis of our practice is to be law, at all times, and never hypothesis, however plausible. The suggestion of the drug in relation to this variety of scarlet fever, and of the similarity of the general modes of attack and action of the two poisons, is made rather to call attention to the drug, and to bespeak for it a farther proving, in the hope that that which can only be named now as hypothesis, may be proved to be fact. The apology for this reference to what is now only hypothetical, in this connection, if further apology be necessary, is in the fact that, in the class of cases under consideration, the remedies heretofore employed have been little better than useless. If we are to have any success in combating this constant companion of death, we have certainly to meet it with other remedies than those used in our past practice. This being so, let Hydrocyanic acid be studied, by all means. There seems to be a promise of good in it.

Tobacco, also, in massive doses, attacks and destroys life in a manner very similar to that of Hydrocyanic acid. The remarks as to the partial proving of the acid, are equally applicable to Tobacco. It is here named for the same reasons given for the suggestion of the acid. Where we have almost no remedies on which we can rely, in dealing with a malady so formidable, even a suggestion of a possibility may perhaps be excused, if not received with respect.

There is another class of remedies which merit far more attention in the treatment of this variety of cases than they have hitherto received. The allusion is to the *serpent poisons*. Of these that of the *Crotalus horridus* is deserving of especial attention. Those who have read descriptions of the progress of cases to a fatal termination, after the bite of this serpent, will be struck with the similarity of the phenomena of those cases to those of the variety of the disease we are now considering. This poison, also, goes direct to the central forces of life, in its initial attack,

and proceeds to *gradually* paralyze and extinguish the living functions, till all are lost, in a manner so like the action of the scarlet fever poison, that even the most unskilled observer cannot fail to perceive the resemblance. But unlike what is now known of the remedies already named, this shows a wonderful resemblance, in the *details* of its action, to the *details* of the symptoms of the disease. So great is this that there can hardly be a doubt of its value in such cases as are not struck so low, by the first impression of the morbid poison, as to preclude any vital response to curative impressions, from whatever agent, in accordance with the known law of cure.

A careful study of the symptomatology of this remedy is earnestly recommended, in reference to these resemblances and relationships, as a duty which can hardly fail to bring a reward for its proper discharge. In these cases remembrance should always be had of that most interesting and reliable cognate of the *Crotalus*,—*Lachesis*. The whole picture of cases, in their progress to a fatal termination, after the bites of these serpents, is so strikingly like the fatal progress of this variety of scarlet fever, after the attack of the morbid cause, that the resemblance cannot but inspire, in those who have proved the verity, that the law of cure is no other than the law of similars, a confident hope that in this class of poisons, and especially in the two members of the class above named, may be found the means of successfully overcoming these rapid cases of scarlet fever, heretofore so generally fatal. But if this, or any other class, of remedies are to be employed successfully, they must be given *early* and with no previous paltering with useless Aconite and Belladonna. This only wastes time and the vital forces where there are none of either to spare.

There is another agent which there is some reason for believing may be found valuable in the treatment of this variety of scarlet fever,—the poison of the *Ailanthus*. The following case came under the observation of the writer:

A girl, fifteen years of age, rose in the morning, feeling slightly ill, dressed and went immediately to the breakfast-table. She could take no food; the sight of it made her feel so much worse she immediately left the table, and went to her room. She was seized suddenly with violent vomiting; severe headache; intoler-

ance of light; dizziness; hot, red face; inability to sit up; rapid small pulse; drowsy, at the same time very restless; great anxiety; two hours after the first attack, the drowsiness had become insensibility, with constant muttering delirium; did not recognize the members of her family; she was now covered in patches with an eruption of miliary rash, with efflorescence between the points of the rash, all of a dark, almost a 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 whole aspect of the eruption, and the whole condition of the patient, were so like those so many times seen in cases of this variety of scarlet fever, that the case was unhesitatingly recognized as an example of it, and in its most violent and hopeless form. 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, and seemingly a perfect instance of that manifestation of it which immediately precedes dissolution in these rapidly fatal cases of scarlet fever. In about three hours from the first appearance of the eruption, the livid color began to lose something of its dark hue; the restlessness and anxiety diminished; the pulse became more distinct and less frequent; consciousness partially returned; the eruption became a brighter red; and the whole train of symptoms so similar to this pernicious form of the fever gradually gave place to a train of phenomena scarcely less remarkable, but not at all like those of any variety of scarlet fever.

Of course this was not a case of scarlet fever at all; but for a short time it was a very great puzzle. What could it be? what could have produced it? When consciousness had so far returned that questions could be intelligently answered, the nature and cause of the case were no longer a matter of doubt. As the eruption began to lose its dark hue and take on a brighter red, there was a repetition of a series of symptoms, then recently treated, in the case of a small lad who had been poisoned by eating the seeds of the *Ailanthus*. This resemblance was a surprise, and at once excited suspicion that this was also a case of similar poisoning. And so it proved to be. It was produced in this manner.



This patient and one of her young associates had been amusing themselves, the evening before the attack, by stripping the outside bark from the young and tender shoots of the *Ailanthus*, and then, after writing letters on the stalks with the point of a pin, these were moistened with saliva which was rubbed on them by the end of the finger. This was many times repeated, and in this process the juice of the stalk was conveyed to the mouth in considerable quantities. Its taste was an intense bitter. Both the experimenters were made ill, with similar symptoms. It is a singular fact that this patient has been attacked by a similar miliary rash each year since this poisoning, at the *season of the blossoming of the Ailanthus*, and is always now more or less ill each year from this cause. This case is here presented to the reader for what it is worth. That it was the result of the *Ailanthus* poison is sustained by the fact that the juice of the green stalks was introduced into the mouths of the two girls, that they both, soon after, sickened, suffering from similar symptoms, differing chiefly in degree of severity rather than in kind; and in the case of my patient showing subsequently a train of symptoms precisely like those witnessed in the case of a lad who was poisoned by eating the seeds of this tree.

The case is also given here with the object of urging on the profession the importance of a thorough proving of this powerful poison. If the subsequent history of my patient can be received, as showing in her sufferings the continued workings of this poison, and if drug agents are indeed related to diseases as curatives by the law which we receive as the universal law of cure, then the relation of the *Ailanthus* to many important diseased conditions is clearly established, and the importance of a knowledge of this relationship, in its details, to both practitioner and patient, needs no argument to show. Let the *Ailanthus* be proved.\*

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\* This suggestion of the *Ailanthus* as a remedy for this form of Scarlet Fever, was written in 1864. In the *Monthly Homœopathic Review* (Eng.) for December, 1868, Dr. Chalmers, of Thornhill, Dumfriesshire, Scotland, reported seven cases cured, which he treated with *Ailanthus*, in an epidemic of more than common malignity, which was prevailing at that time. His attention was called to the above case of poisoning by his friend Dr. A. C. Pope, of London. He was struck by the resemblance of the symptoms of the poisoning to those of cases he was treating and losing before the use

The second class of cases which we propose to treat of, that in which the attack of the poison is followed by symptoms resembling those of acute cerebral inflammation, is more commonly met in practice than that which has just been considered. It is less rapid in its progress and not so uniformly fatal in its results. The initiation is less sudden and violent. The patient, very likely, has slight chills (rarely severe), followed by a disproportionate severity of heat of the skin and frequency of the pulse; the pain in the head is violent, often accompanied by vomiting; intolerance of light and sounds; great redness, heat, and turgid appearance of the face; the eyes are injected, and perhaps suffused; the patient soon becomes drowsy; is very restless; intolerant of all disturbances; the skin is generally covered with the characteristic eruption, or this is in patches, as has been already described; the

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of the *Ailanthus*. These seven were the only dynamic cases he treated after he received the medicine, and they all recovered. Before its use, such cases died in his own practice and that of his friends. The following are symptoms of the first reported case. The others were as near like this as cases of epidemics usually are like each other.

“The eruption appeared scantily two days ago, accompanied with sore throat, and what were considered mild febrish symptoms; but he has been restless and incoherent throughout, and particularly at night, and for two nights has been with difficulty kept in bed. The body and extremities are now covered with an irregular patchy eruption of a very livid color, disappearing on pressure and returning very slowly. The skin is dry, not very hot, and mixed with a livid eruption are numerous small vesicles all over the chest, neck, and forehead, the extremities being free from them. Eyes are suffused, congested, and wild-looking; tongue dry, parched, and cracked, and the teeth covered with sordes; the throat is livid and swollen, the tonsils studded with numerous, deep, angry-looking ulcerations, from which exude a scanty fetid discharge; the neck is tender and very much swollen; the nostrils congested; pulse is weak, very frequent and irregular. He has refused to swallow anything for the last twelve hours; breathing is hurried, irregular and heavy; he is semi-conscious, and evidently cannot comprehend what is said to him; bowels have been, and are too freely moved for the last two days, the result of a dose of oil, the motions being thin, watery, and offensive, and with the urine, are passed involuntarily.”

Dr. Chalmers gives credit to the *Ailanthus* for the cure of these cases, and bespeaks for it a more extended investigation.

The subject of the above poisoning is (Oct. 1875) visiting me. She gives me this additional fact in relation to it. Since the poisoning all antecedents of her life are forgotten, or remembered as belonging to another, or as matters she has read about.

color is of a brighter red than is found in the torpid variety, and the eruption is less evanescent; if the eruption be in patches, the interspaces are less of the opaque and dull pearly aspect than in the torpid variety; delirium is early developed and becomes increasingly violent; or, if at the outset, only occasional, in the progress of the case it becomes more constant; it is oftener demonstrative in its character than mild and muttering; amounting, in its later stage, to terrors and screamings; and these may be finally followed by coma, convulsions, and death.

It requires no extraordinary powers or knowledge on the part of the practitioner to perceive at once, that a case showing symptoms like the group here presented is in a very different pathological condition from that of the class already considered. We may continue to call both by the same name, as long as it may please an ignorant clientage to demand names for their ailments, or as long as a profession, affecting a knowledge which it does not possess, may be disposed to gather under one denomination diseased states dissimilar, or even antagonistic, as in the case before us; still they can never be the same thing, and can never stand in the same curative relationships to remedies, except in the case of those drugs of great value, which, in their provings, have been found capable of producing opposite morbid conditions on the healthy prover.

This class of cases is, in the general, characterized by excess of action, the other by deficient or suspended action. Hence it is most obvious that remedies which may be equal to the prompt cure of the one class may have no relation whatever to the other, and if employed in the treatment of it, can give to patient or physician no other result than disappointment, with increase of suffering and danger. As in the first class the curative was to be sought in that class of drugs which produce torpor and paralysis, in the second it is to be found among those which exalt the action of the vital forces, and by increased violence exhaust the more rapidly their power to execute the functions on which life depends. Among this class of drugs we are now to look for individual members which, while they have the generic quality of the class, have also the specific characteristics of the disease before us.

The first remedy of this class to be considered is Aconite. Its

relation to the disease, judging from its recorded pathogenesis, and we can properly judge from nothing else, must be restricted to narrow limits. It has but few symptoms which resemble those of the disease, in any of its stages or phases, and of these the greater part are such as are found almost solely in the early, or earliest, stage of the strictly inflammatory varieties. In these cases it may find an important place in the treatment of such as chiefly localize their attacks on the brain. Of special symptoms resembling the generics of scarlet fever there are almost none. Of general symptoms, analogues of those which characterize fevers accompanying acute inflammation, there is no lack. There are heat and sanguinary congestion of the surface of the body; thirst; rapid and hard pulse; general restlessness; pains in the head; peevish disposition, which revolts against all interference; perspiration, if present, is hot; heat and shootings in the throat, etc. But there is not in the pathogenesis of Aconite, in any of the provings at hand, the record of any eruption in the least resembling that of either the true scarlet rash, or of the miliary variety like that with which we have oftenest to deal at the present day. Aconite does not attack the living organism in the modes so characteristic of the scarlet fever poison. The effects of the two poisons on the brain are only similar in the beginning of some cases with an inflammatory type of the fever. Their effects, as developed in the throat symptoms, show little similarity, those of Aconite being but little like those of the cases of the fever which prove fatal through local destructions in the throat. If these views, then, are correct, Aconite can only be of use, in the treatment of this fever, as a general palliative of the violence of the inflammatory febrile action, and never as a curative of the local affections through which the disease is chiefly fatal. And for its right use we must depend on general principles and on the similarity of general symptoms of the drug and the disease.

*Bryonia* may have an important place in the treatment of this variety of fever. It will be well in deciding the selection of this remedy to bear in mind the analysis given elsewhere\* of its characteristics, and the comparison of them with the effects of some

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\* *Vide* Am. Hom. Review, vol. iv, No. 2, p. 52, *et seq.*

other drugs, especially of Aconite. One fact, at least, should not be forgotten, viz.: that cases calling for Bryonia are likely to present nervous symptoms dominating the vascular, while with Aconite the reverse is the case. Bryonia has also in its pathogenesis repeated records of miliary rash. It shows itself especially on the arms, the front of the chest, and knees; it becomes red and *itches in the evening*. This, to be sure, is only a repetition of one of the generic elements of the fever and its occurrence in the pathogenesis of the drug may give more importance to the remedy in the treatment of the fever than is warranted by the law of cure, properly understood. Still in the present state of our knowledge of the value of this class of phenomena to the prescriber it cannot well be overlooked.

Bryonia is often of great value in cases where the eruption has suddenly disappeared, and this disappearance has been followed by symptoms threatening great danger to the patient. The power of the drug to reproduce the eruption, in these circumstances, has been long recognized, but whether in a given case it is to be preferred to Ars., Bell., Caust., Hepar, Ipecac, Lyc., Rhus, Sepia, Stram., or Sulph., is to be decided by the greater resemblance of the general and characteristic symptoms of the given case to the similar symptoms of this or either of these drugs. The decision always depends on this resemblance and never on the fact that the eruption has disappeared, and hence the necessity of the most careful study of these symptoms before selecting the remedy on which we shall depend. *Care here*—before the first prescription—is in the highest degree important, for the case is likely to be rapidly fatal if not speedily relieved. There will probably be small opportunity for giving these drugs in succession if the selection of either has been hasty and wrong.

We have endeavored to call attention to a class of cases in which Belladonna can seldom if ever be found otherwise than hurtful, and to show that this must ever be true from the nature of the case, the class being characterized by torpor, or depressed action of the vital forces, while the effect of this drug, on these forces, is to produce the exact opposite, viz., an exaltation of their action. Consequently the relation of the remedy to this class is never homœopathic, but always antipathic, and hence the result of its

use must be, by the law of drug relationship, in its secondary, or reactive effects, to intensify the morbid state which was to have been moderated and controlled by its use. But in that variety characterized by excessive action of these forces, especially as affecting the brain, the case is different. In this variety the drug under consideration is often of the greatest value; it may be even indispensable. The following is a translation of symptoms which are likely to meet their counterpart in cases of the fever in the class under consideration. That many of them are strikingly like those often met in practice is obvious. That they sustain the assertion of the active, demonstrative character of the action of this drug, as found in the records of its effects on the healthy, which we have here and elsewhere insisted on as characteristic, cannot admit of a doubt.

*Convulsions*—with outcries and loss of consciousness—with delirium—with distortion of the eyes—especially affecting the flexor muscles—with jerkings, especially of the hands and feet, loss of the sense of touch, and loose rattling of mucus in the bronchi. Rigidity with bending of the body and head backwards, or to the left side. Attacks of rigidity or immobility of all, or of a single limb, sometimes with loss of sensation, distended superficial veins, red and turgid face, full, quick pulse, and copious sweating.

*Trembling* of the limbs, also with convulsive shakings; with weariness; in the heart, forenoons.

*Restlessness*.—Great restlessness of the limbs, especially of the hands and feet, and also of the head, compelling a constant moving and change of their position.

*Skin*.—Scarlet spots and scarlet redness, especially on the face, throat, chest, abdomen and hands, with acute swelling of the parts; sometimes with rapid small pulse, tightness of the chest, violent cough, delirium, increased activity of the memory, rubbing of the nose, and distended pupils. Erysipelatous inflammations, also with swelling, or even with gangrene of the parts. Redness, inflammation, and swelling of the entire skin of the body.\*

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\* To the above, written in 1864, we may now add from that work of great labor and completeness, Allen's Encyclopedia, the following skin symptoms of this drug: Redness of the whole body with quick pulse. The skin red.

*Glands.*—Swelling of the glands, painful or suppurating.

*Sleep.*—Coma. Stupefying coma, like lethargy, with deep sleep and moaning respiration, lying motionless, occasionally opening the eyes with a wild look, or jerking of the tendons; pale, cold face, cold hands, and hard small pulse; wakes with a start and fright, especially on going to sleep, sometimes with sweat on the forehead and epigastrium, and fear as if something under the bed made a noise. Restlessness and tossing.

*During Sleep.*—Outcries. Sighings. Jerkings, which wake the child up, also on falling asleep. Singing and loud talking. Suffocating snoring during inspiration. In the evening when falling asleep, he feels as if swimming in the bed. On closing the eyes to sleep, immediately there are frightful visions and jerkings. Anxious and frightful dreams. Dreams of falling.

*Fever.*—Dry burning heat. Internal or external heat, or both at the same time.

*During the Heat.*—Delirium and redness of the face. Throbbing of the carotid and temporal arteries. Redness and swelling of the face. Pulse strong and rapid, or small and quick.

*Disposition.*—Unwillingness to speak. Indifference. Apathy on which nothing makes an impression. Answers only with anger and outcries. Increased susceptibility of all the senses; all impressions on these are too strong. Howling and outcries for the merest trifles, increased by being spoken to.

*Intelligence.*—Insensibility, with convulsions, especially of the arms. Loss of consciousness. Stupidity. Insensibility, as if in a dream, also in the evening, in bed. He neither sees nor hears. He recognizes no one, even his relations, especially by the sense of hearing. He does not know whether he sleeps or wakes. Il-

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Skin red with only slight fever. Face, chest, and extremities extremely red. In a girl, general scarlet redness. Redness like scarlatina of the entire surface of the body. Scarlet redness of the surface of the whole body, especially of the face, with marked action of the brain. A scarlet redness suddenly spread over the body, especially the face and limbs, with which appeared heat and exaltation of all the faculties, still without thirst. Scarlet suffusion of the skin in young children, and those who have a delicate skin. Scarlet redness of skin of face and neck, followed on the second day by peeling off of the cuticle. Inflamed red patches of the skin, and irregularly shaped scarlet spots over the body (after sixteen hours).

lusions of the senses, and imagination. Delirium, especially at night, with a staring look. Murmuring delirium. Vertigo with trembling of the hands; with dulness of the senses; with nausea.

*Head.*—*Heaviness* of the head. In the forehead, especially over the eyes, with pain in them when touched, and difficulty of opening them especially in the morning, on waking. *Pressing heaviness* in the occiput, or towards the temples, with diminished hearing. Heaviness in the head like drunkenness, with vertigo. *Outward pressure* in the head, with sensation of bursting, especially in the forehead, as if all would come out forwards. *Tearing* in the head, especially in the forehead over the eyes, in the vertex (Scheitel). *Shootings* to the temples outwards, or in the temples. *Pressing shootings* in the temples, or to all sides of the brain. *Cutting shootings*, as if with knives, especially evenings, in the whole head, or only in the occiput. *Shootings* from one temple to the other. *Throbbing* in the whole head, after pressing cutting. *Pressing throbbing* in the occiput. Strong pulsation of the arteries of the head, especially of the forehead and temples, or with sensation in the bones of the forehead as if they were raised up; or in the morning after walking, with pulsations in the whole body. *Heat* in the head. Painful sensibility of the hairy scalp to the slightest touch, even of the hair. Convulsive shaking and bending backwards of the head.

*Eyes.*—Red, injected conjunctiva, also with shootings, and tears. Spasms of the eyelids. Eyes opened wide. Eyes prominent. Immovable. Sparkling, brilliant, distorted, or in convulsive motion. Glassy. Red. Great sensibility to light, with spasmodic turning of the eyes from the light.

*Ears.*—Deafness, as if a membrane (Felle) were drawn over the ears. Increased sensibility and repugnance to sounds.

*Face.*—Burning heat and redness, especially of the cheeks, as if after drinking wine, with congestion of blood to the head, or with violent headache and ice-cold extremities. Red, scarlet spots on the face, also with strong pulse. Convulsions of the lips. Distortion of the mouth. Lips dark red and dry.

*Mouth.*—Great dryness of the mouth, extending to the throat; the larynx as if constricted, hindering swallowing, also with or without thirst. Bloody froth at the mouth, with grinding of the



teeth and shaking of the head. Mouths of the salivary ducts ex-coriated, as if corroded. Sticky slime in the mouth for the most part with sensation of dryness. Foul smell from the mouth, as if from disordered stomach. Tongue cracked, red, hot, and dry. Papillæ bright-red, inflamed and swollen. Trembling of the tongue. Heaviness of the tongue. Paralytic weakness of the organs of the voice. Difficult and stammering speech, also like that of drunkenness, with full consciousness and dilated pupils. Nasal speech. Loss of speech.

*Throat.*—As if raw and ex-coriated, especially when swallowing, touched with the tongue, or chewing. Burning in the tongue and fauces, especially when swallowing food or drink. Shootings and pain as if swollen, only when swallowing, turning the neck, or feeling of the throat. Inflammation, swelling and redness of the throat and fauces, palate, uvula, and tonsils. Swallowing painful, difficult, or entirely prevented, even of fluids, which often return through the nose. Impossibility of swallowing, with aversion to all liquids, even to madness. Dryness of the throat and mouth prevents swallowing.

The above are literal translations of symptoms of Belladonna, as found in the first volume of Jahr's *Codex*. The translation has been made from this, rather than from the *Materia Medica Pura*, or other volumes of provings, because of its character, being a compilation from the various provings in existence when it was prepared, as presenting a wider range of symptoms than is found in other works. For the purposes of the present paper, the wider range of the *Codex* presented advantages which have been availed of to gather in one view the symptoms which are scattered through other works, and by which the drug is related to the disease under consideration. There may be other symptoms under other rubrics in the pathogenesis of the drug, which may find their counterpart in cases of the fever, but the object was to present those which are oftenest repeated in cases affecting severely the brain and throat, through one or other of which attacks are oftener fatal than through destructive processes in other parts of the body. And first let us examine those indicative of brain affection, and see if their character sustains the judgment expressed, that the action of this drug on the brain is characterized by excess of action as opposed to torpor.

In the first rubric, *convulsions*, every fact sustains this view, if we except the paralysis of sensation and mucous rattle, which are not incompatible with it, both being often met in the last stage of what has been unquestioned inflammatory condition of the brain, though both symptoms are also met in cases of torpor or paralysis of this organ.

In the second the relation may be to the first stage of the inflammatory state or the torpid, the symptom being of that general character which may be found in a great variety of affections, and hence as indicative of specific character of either drug or disease is not of the first importance.

In the third there is certainly less of specific likeness to the peculiar eruption of the fever than might have been expected from the almost universal use of the drug, based largely on the scarlet quality of the eruptions it has produced. There is none whatever to the eruption of the fever, as oftenest met at the present day, in its severest manifestations, except in the one item of color. The first variety is certainly attended by many phenomena often met in the fever which characterize it as well as the drug, and which it is likely have much to do with the curative relation of the drug to the disease, notwithstanding the swelling, which the fever rarely shows, except of the glands and the cellular tissue about the throat. After a careful attention to the skin affections of Belladonna, these three are all by which it can be said to be related to the fever by the law of similars; it can hardly be supposed that these alone were the reasons for elevating this drug to the dignity of a supposed general specific for scarlatina. There must have been other and stronger resemblances in other elements of drug and diseased action.

Of the *sleep* there is nothing very peculiar. The coma is not so characterized as to declare it more like that of scarlatina than of any one of the numerous affections of which it may be found a symptom. So of waking. These symptoms are met in scarlet fever as well as in other affections, and are indicative of active rather than torpid state of the vital forces of the brain, though coma belongs to both. The same observation it will be noticed is equally applicable to the symptoms during sleep, and to those of the fever, and disposition, if, in relation to this last, it be re-

marked, that *apathy* may belong to the early stage of either torpor or inflammation.

The developments of the effects of the drug in the modifications it produces of intellect, are of the highest interest and are without exception similar to those which often result from inflammation, though insensibility and loss of consciousness may be met in states of torpor.

Of the symptoms of the head, all belong to the inflammatory condition, while only vertigo and heaviness are common to this and torpor; while those of the eyes, ears, and face are all strictly inflammatory in their character, those of the mouth are mixed. All may be attendant on some stage of inflammation, while some of them are often met in states of torpor. The symptoms of the throat, it will be observed, are all subjective, except the redness and swelling, and all such as characterize common phlegmonous inflammation of the parts, of an acute character. The absence of those symptoms which characterize the class of cases so often fatal through destruction of the tissues about the throat, internal or external, is noteworthy. There is nothing of the foul smell, and tenacious, offensive, and often excoriating secretions which are constant concomitants of the internal sloughings of the throat, or of the hard and immense swelling of the exterior cellular tissue which so soon sloughs and discharges externally, if its progress be not checked; after which, how generally fatal these attacks are, we all know too well. The pathogenesis of Belladonna will be searched in vain for good and sufficient reasons for its use in these sad cases. There are no such reasons, and yet it has been given again and again, and though it has often failed of giving the least aid to a cure, it has still been the one great resort, as though, the case being scarlet fever, it must somehow benefit. Such prescriptions must have resulted from some such reason (or unreason) as this, for in the pathogenesis of the drug, the only true foundation for specific prescribing, it has no support. Its administration in such cases, where it must almost always be out of place, is not merely attended by a loss of time, where the loss can be so ill afforded, and where there is always so little to lose, but the drug, by its antipathic relation, must often inflict great and positive mischief on the poor patient, which he has little power to resist. We have

protested against this course of prescribing, and again, with this protest, we declare that it cannot be too carefully avoided. In any case where the practitioner is tempted to give this drug, let him look carefully to its pathogenesis, and if in this he finds the resemblance to the characteristics of his case which the law of cure requires, the result will not disappoint him. But if this resemblance be wanting let him avoid its use as he would a certain evil. If he can do no better than this, by all means let him leave his patient to his God and the powers of recuperation he has given, for, in these circumstances, this is his highest duty, humiliating as the declaration may be.

There is another condition in which Belladonna has often been given without the benefit following which was expected, and which a hasty examination of its pathogenesis might declare was reasonably anticipated. We refer to the stupid, comatose state which is sometimes developed even early in the history of the case, at other times only later. Belladonna seldom relieves this, though we have both coma and stupidity in its pathogenesis. And so clear and positive is the expression, that the seeming is still, after frequent disappointments, that it must relieve, at least this next case, notwithstanding the previous failures. The explanation of these disappointments is not difficult. It is found in the fact, already sufficiently insisted on, that Belladonna is not homœopathic to a condition of torpor. And the coma and stupid dulness which belong to scarlatina, to which we here refer, are of this condition. Its action, if it act at all in cases of this description, must be antipathic, and therefore not curative. If given in larger doses, there may possibly follow a palliation which can only be of brief continuance. Opium or Stramonium will more likely be in place in cases of this kind, the preference being for Opium where these symptoms are simple and strongly expressed, and for Stramonium where there is somewhat of activity with the torpor.

In the series of remedies from which we may be called to select in the treatment of a case of scarlet fever, characterized by the phenomena of acute inflammatory action within the head, if viewed as standing in the order of the degree of violence which marks this variety of their action on the brain and its membranes, the first place will undoubtedly be given to Belladonna. This ap-

pears conclusively if we compare the elements of its pathogenesis given above with those of the other members of the series. By this standard (and it is in the order of the violence of their action we propose to consider them) the third place is as certainly to be given to *Hyoscyamus*. The value of this drug in the treatment of inflammatory affections of the brain, resulting from the action of general causes, has been fully recognized. Where the symptoms of a case are similar to those produced by the drug on the healthy, it is no bar to its use that the disease is the result of a specific poison. It would have been but natural to anticipate its efficacy in this class of affections from the success which has followed its use in the non-specific inflammations. That which would have been anticipated of its value in these cases, has been often fully confirmed by practical results. It hence becomes of the highest importance here, as with Stram., to fix the exact place of the drug in the series of those from which we are to choose in our prescription, and to establish as clearly as possible the signs which decide for its selection. Before proceeding to this, the general remark may be permitted, that the sphere of *Hyoscyamus* in the treatment of scarlet fever is a limited, though not an unimportant one. It is rare that it is more than a temporary resort for the relief of some sudden attack of the brain, which, if not controlled, threatens destructive consequences. In such cases it may be of the highest value, though never a curative for the entire disease. Its sphere seems to be limited to cases with acute inflammatory affection of the brain, or to that state between erethism and torpor, which places it in relation to Bell. and Stram., as in typhoid fever, below Stram. This will appear plain on a careful comparison of the symptoms of the three related drugs, which are liable to be repeated in those of the fever. The symptoms of *Hyoscyamus* related to scarlet fever are fewer in number, and those which are most prominent are accompanied by fewer concomitants, showing that it strikes less deeply into the vital forces than either of its allies, and that the disturbances of the vital balance which it produces, are fewer in number as well as more superficial than those of either Bell. or Stram. If we begin the series of its symptoms as in the preceding, we shall find its

*Convulsions* sustaining this view. Spasmodic bending of the

limbs, while the curved body is thrown upward in the air. Spasmodic tetanic stiffness of the whole body. Jerking of the limbs. Subsultus. Convulsive motions of the limbs with frothing at the mouth; great throwing about of the body; with a renewal on the slightest attempt to swallow liquids; with thumbs drawn inward on the palms.

General prostration of strength, with trembling of the whole body and coldness of the extremities.

Burning of the skin when laying the hand on any part of the body. Inflammation of the skin of the whole body with cinnabar redness.

Irresistible inclination to sleep (op.), continued profound slumber or sleep. Excessive (*unmassiger*) sleep. Quiet sleep. (Op.) Coma vigil. (Op.) *In sleep*, perspiration, laughing expression of countenance, suffocating, snoring during inspiration. [The distinction between this symptom and that so characteristic of Opium is not difficult; with Opium, the respiration is *slow*, deep, loud, and snoring, but there is no suffocation.] Whimpering, with throwing up of the arms, tossing about of the head, throwing about and jerking of the feet (Stram. more of the hands), and opening and spreading, and then closing of the fingers.

*Sleeplessness* from nervous excitability, with convulsions and shuddering as if from fright. Sleepless the whole night. Sleepless with anxiety. The child passes the whole night in tossings and cries, wakes with screams. Wakes and starts up in a fright. The sleep is interrupted by grinding the teeth. Frightful dreams.

Restlessness the greatest, he moves constantly from place to place. Terrible anxiety. Shudderings alternating with trembling and convulsions. Uses violence, and strikes his attendants.

Insensibility to nipping and pinching. Entire loss of perception and understanding. Complete stupidity and loss of consciousness. He neither sees nor hears. Does not recognize his relations. Sits in bed like a statue, immovable, and bereft of his senses. Delirium even when awake, as if he had seen a man who was not present. Absurd talking and muttering. Grasps at the nearest object and cries that he shall fall. Lies naked in bed, talking. Violent moving of the hands with constant burning heat, outcries, and difficult breathing. Remembers occurrences

long past. Great weakness of memory. Inability to think. Dulness and sinking into continued sleep. Confusion of the head as if absent-minded. Vertigo with clouded sight. Violent vertigo. Vertigo as if from drunkenness.

Continued violent pains in the head, with preternatural heat, alternating with pain in the nape of the neck. Dull pains in the base of the brain; in the forehead, especially in the membranes of the brain. Heaviness of the head with severe pain.

*Eyes*, sparkling and red, distorted and open, prominent and convulsed; sunken, sparkling, and staring; staring and distorted; gazes on those present with a staring look. Strabismus. Inability to open the eyelids. Pupils much dilated or contracted. Objects appear enlarged and brighter colored.

Tongue red, dry, and parched, while it is clean or brown-coated. Burning dryness of the tongue and lips, which look like burnt leather. Sensation of fulness of the tongue, as if burnt, much increased by speaking and inspiration. Inability to speak distinctly. Loss of speech with loss of the senses.

Great dryness of the throat (also shootings), and almost constantly with thirst. The throat is so dry and constricted that a single swallow (of tea) will suffocate him. Pressure of the throat, as if swollen, when, and when not, swallowing. Points to the throat with the finger as if something stuck there. The throat as if constricted, preventing swallowing. Inability to swallow. He spits out the liquids which have been put in his mouth.

It requires only a cursory comparison of the above symptoms with the two series of Bell. and Stram., to discover the differences which control the selection of either of these drugs in cases when one of them is called for by the law of similars. The convulsions of Hyoseyamus are quite peculiar. In one of its forms, affecting chiefly the flexor muscles of the limbs and trunk. In another, the tonic character of the spasms is quite marked, more so than in either of the others. Jerkings in the symptoms of Hyos. are replaced by trembling-shaking in those of Stram. The jactitation is peculiar to the convulsions of Hyos., or at least this feature is more prominently expressed here than with either of the others. The *trembling* is here accompanied by general prostration, while it is not so in the case of the others. Burning of the skin is peculiar

and different from the skin affections of either of the others. It will be well to note carefully the symptoms of sleep, and to compare them with the effects of Opium, as well as with those of Bell. and Stram. The similarity of the symptoms of Hyos. and Opium in this rubric are quite marked, and it is often in this rubric that the symptoms are found which decide the choice of the remedy. In treating the coma of scarlet fever, so often significant of grave cerebral condition, and often developed even early in the case, the experience of years has taught that little is to be expected of good from either Bell. or Stram., while prompt relief will follow the use of Opium or Hyos., if these be selected with careful reference to their differences and to the similarity of these to the symptoms of the case. If, in this class of cases, time be lost in proving, by actual trial, the worthlessness of Bell., the case will probably pass on to a hopeless state, the condition having been either aggravated by the action of an inappropriate drug, or allowed to progress uninterruptedly towards a fatal termination, during the whole time in which the action of a rightly selected drug could have been curative. It is in just this class of cases that the utmost care should be used in the first prescription, for the enemy is likely to allow little chance of good from any subsequent one if this proves to be wrong. The symptoms developed during sleep are also worthy of careful attention. The symptoms of the intellect, head, and eyes, though like to those at times developed in an inflammatory attack within the head, are many of them of a less distinctive or demonstrative character than are those of its two related remedies, and this is one of the chief differences by which its true character and place in practice are indicated. Where the symptoms are more demonstrative in their character, they have also more numerous concomitants.

*Sulphur.*—Before presenting the elements of the pathogenesis of this drug, we wish to make a few general observations on its use, especially in the treatment of acute diseases. There is a notion prevailing with many practitioners that this remedy, though of great value, is more especially appropriate to the treatment of chronic than of acute affections. That if in place at all, in dealing with the latter, it is only after the first stage of the attack has passed, or there have been deposits in cavities, in parenchyma, or



upon surfaces, which are to be removed; or the acute attack has roused to activity some old cachexy or chronic miasm, giving to the case much of the character of that class of affections for which Sulphur is supposed to have special appropriateness. This, though an error, is not without excuse. It has in part, at least, grown out of the division of diseases by the great Master into the two classes of psoric and apsoric, and giving to Sulphur the place of first importance in the treatment of cases of the first division. To the efficacy of the drug in this class of affections the experience of intelligent homœopaths of all countries bears ample testimony. The error of those who have failed to recognize its importance in the treatment of the second class, is in this restricted view of its relations to one class, and to an altogether too limited view of the prevalence and importance of the miasms which are the producing essence of those affections which all term chronic. (Psoric.) There is no attack of acute or apsoric disease where these miasms may not be brought into action from their previous latent state, and in which then they are not a cause of increased embarrassment to the practitioner, and danger to the patient. It is just the cases of the apsoric class that are likely to excite the activity of the psoric poison. How often is this the case in measles, typhoid fever, pneumonia, influenza, etc., and when this occurs, in these or other affections, who shall draw the line where the case ceases to be acute and becomes chronic? We make this statement of the general liability of diseases, commonly called acute, to become complicated in their progress by the roused activity of psoric miasm, thus broad, in the full view and belief of the almost universal prevalence of this poison in each individual of our race. Where is there one, who can be said to be entirely free from it? And wherever it exists, there it may and does become active whenever subjected to the action of causes which in their nature tend to rouse it from its latent to an active existence. Of such causes, all experience proves, that those which originate common acute diseases are the most important. Therefore, even on the view of the relationship of this drug which would limit it to the treatment of affections commonly received as chronic, or psoric, it may be called for in the treatment of any one member of the other class by reason of this complication of

the chronic element, so likely to occur, and so important when met.\*

But this is not all the truth. There is in the relationship of Sulphur to diseased conditions, as their curative, no law which separates it from the law which declares and constitutes this relationship for all other drugs. There is no exceptional element by which it is removed from the domain of the common law, which requires similarity of the characteristics of the drug and the disease for the constitution of this relationship. Neither is there anything in the division of diseases into the two classes named which removes either of them from the authority of this common law, in the discovery and establishment of their curative relations. This division evolves no new relations, and imposes no new conditions. It is the similarity of the required elements, and this alone, which declares that this or any other drug will cure a given case. If this similarity be ascertained, it does not matter whether the case may have been classified as acute or chronic, or whether the drug has its place with the psoric or apsorric; the one will be cured by the other in all cases and conditions where cure is yet possible.

If these views are correct, it follows that Sulphur may be in place in the treatment of any, the most acute, diseases, inflammatory or otherwise; that it is sure to be the best remedy in any or all these, whenever its characteristics are more like the characteristics of the disease, than are those of any other drug. And this is just what enlightened experience and observation have proved to be the fact. Under the guidance of this law of similars it has been selected for the cure of the most violent and dangerous inflammations, and they have yielded to its power. Indeed, broad as is its clinical application by this law, it may be doubted whether in any class of diseases it has greater value, or will oftener be followed by success, when rightly selected, than in that of the most important inflammations, in which, hitherto, it has been unwarrantably neglected. This certainly has not happened from a failure, after a careful study of its pathogenesis, to find a resemblance to

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\* See paper on the "Use of High Potencies in the Treatment of the Sick," by Carroll Dunham, M.D., *Am. Hom. Rev.*, p. 297, *et seq.*, where this subject has been more fully discussed.

the phenomena of acute inflammation of important organs. How beautifully and how often has the use of this drug in peritonitis, pneumonia, pleuritis, meningitis, etc., been followed by the prompt and complete disappearance of these grave affections, showing conclusively, not that its psoric relationships are less general or important than has been supposed, but that like all other drugs, it has other relations, scarcely less important, growing out of the general law of similars, by which it stands allied to a large class of important affections, which may or may not be complicated with the psoric poison, but which have their origin from causes entirely independent of this. An example illustrative of this is often met in the progress of cases of scarlet fever, especially in those which are characterized by prominent brain affection. The following symptoms from its pathogenesis are the grounds of this relationship :

Miliary rash (Friesel) on the whole body, sticking, itching, or itching followed by exfoliation of the skin. [A tolerable picture of the cutaneous phenomena of scarlet fever, as now oftenest met, from the beginning to the end.] A fiery red or scarlet (Scharlachartiger) eruption over the whole body. After a slight rubbing, the skin is for a long time very painful, as if it were raw. Swelling, suppurations, and indurations of the glands. [Not necessarily belonging to this fever with the affection of the brain we are considering, though in the progress of these cases the glands of the throat often become involved.]

Difficulty of falling asleep, with frequent waking, at night. In the evening, in bed, he cannot fall asleep for an hour. Cannot sleep before twelve o'clock, and then there is frequent waking and tossing about in the bed. On account of great restlessness, he cannot sleep after midnight. Wakes each time with fright, as if from a terrifying dream, and after waking is filled with anxious fantasies, from which he can not free himself. Restless tossing here and there without waking. Severe pains in the head which hinder sleep, and allow of rest in no position. Frequent waking on account of beating of the arteries in the head. Waking, especially in the evening, on falling asleep with frightened start. Calls out as if unconscious (in sleep). Delirium, in a restless sleep, filled with dreams, before midnight, like anxious delirium. Eyes

half open in sleep. Indistinct muttering in sleep. Snoring. Lies with the arms over the head. Frightful and anxious dreams, in which he gets out of bed, unconscious, followed by violent headache. Immediately on closing the eyes, visions of strange and frightful apish faces, which he cannot keep away. The child is angry and passionate. Excited temper, easily excited. Seizes on things with great haste.

Headache, with nausea, also with heat and rushing sound (sausen) in the head. Heaviness of the head, which makes every motion unpleasant; in the vertex; like a weight pressing from above downwards upon the brain, as if a band were drawn around the head. Pressure mostly on the vertex, as if the eyes would be forced out, or as if the brain were pressed from above. Tension in the forehead. Drawings in the forehead and temples and in the occiput, so sensitive while chewing that he must stop eating. Jerking pains in the head, especially over the right eye. Shootings in the temples; in the vertex. Throbbing in the head morning and evening; in the temples; hammering throbbing, during earnest speaking, or very painful. Single blows through the head. Congestion of blood to the head, and often with flushing heat. Heat in the head, mornings and evenings, with cold feet; great and dry with glowing redness of the face, mornings, on waking. Humming in the head, especially in the vertex. Ringing rushing towards, and out of the ears. Striking of the brain upon the skull when moving the head, with pressing pain. With every nod of the head pain as if the brain were struck.

Redness of the eyes the whole day, with great itching in them in the evening. The pupils are greatly contracted. Intolerance of light especially of sunlight.

The symptoms connected with sleep have been given somewhat fully, from a conviction that it is often in connection with these that the indications for the use of Sulphur in this fever are found. It is no objection to this view that these symptoms are often met in other and less grave affections. It does not follow from this admitted fact that they may not be also indices of curative relationship in graver affections, when similarity to them obtains in the phenomena of the disease. It will be noted also that there are few moral or intellectual symptoms in those translated above.

It is true also that in the class of cases for which Sulphur will be found of the greatest importance, this class of symptoms have few representatives, or are in some cases almost in abeyance. The head symptoms are important and quite suggestive of acute inflammation. It is true in many cases of the brain affection we are here considering, the subjective symptoms are more or less completely masked by the paralyzed perceptions of the patient, and that we are deprived to that extent of their aid in our study for the selection of a curative, but where this paralysis is found in connection with other phenomena of cerebral inflammation, these symptoms may be assumed to be more or less present, for the purposes of the prescription, and acted on as if really detected.

As illustrative of the view here given of the importance of the sleep symptoms, and also of the variety of the fever to which Sulphur is appropriate, we give the following case:

A little girl of five years was attacked with the ordinary symptoms of scarlet fever, in the latter part of November, 1844. The initiation of the attack was with chills, vomiting, violent headache, prostration, peevishness, flushed face, injected eyes, etc. Then in a few hours came the eruption in the miliary form, patchy, and evanescent. At times it was bright and full, then it faded and partially disappeared. The mind soon became wandering, and then delirious, the character of the delirium being active rather than muttering. The heat of the skin was great, while the skin was at the same time dry, hard, and somewhat roughened. The throat was moderately swollen, internally and externally, impeding somewhat both speech and deglutition. The patient was treated chiefly with Bell., till the evening of the fourth day, growing rather worse than better, at which time, in addition to her previous symptoms, she was apparently wide awake, but positively asleep so far as perception or recognition of her surrounding relations were concerned. She no longer knew her attendants or heeded whatever was said to her. She was in great agitation and anxiety, with loud outcries, not screams, calling out that she wished "to go to bed," though she was upon the bed at the time. Immediately on being laid on her pillow she would spring up and call out that she wanted "to go to bed;" and this was repeated as often as she was replaced, with the assurance that

she was already on the bed. She seemed to have no apprehension of what was said to her. The eyes were injected and staring. The aspect dull and heavy, though very anxious, and apparently apprehensive. At six o'clock in the evening she got a dose of Sulphur. She soon became more quiet, then fell asleep, had a good night, and in the morning appeared convalescent. She recovered from this time without accident.

It will be noticed there was a marked peculiarity in this case. The patient's eyes were wide open, even staring, and yet she seemed to see nothing. She seemed wide awake and yet to hear nothing. She paid no attention to anything said to quiet or comfort her. No one of her senses seemed to recognize objects or relations around her. She did not know she was on the bed, all the time she was so anxious to go to it. The whole state was so like that of sleep-walking, or somnambulism, that the resemblance could not fail of being recognized. The relation of Sulphur to this state is disclosed by the following symptoms: "The night-walker gets out of his bed as if unconscious, saying, 'My head, my head, I am insane!' and seizing upon the forehead. Rises from the bed as if somnambolic; thinks there is a fire, dresses herself, speaks out at the window in alarm, when she hears nothing, but is much debilitated and as if bruised for three days." The state of waking unconsciousness is here clearly disclosed, and though the expressions or hallucinations are not the same as those manifested by the patient, the general state of the two, it will be seen at once, as to essential particulars, was the same. The truth of this view is confirmed by the prompt recovery of the patient after taking the drug. Other similar cases have been relieved with the same promptness and completeness by the use of Sulphur.

This case in connection with the above symptoms gives opportunity for the remark that it is not the *literal* similarity of the pathogenetic record and the expressions of patients which the law of cure contemplates or requires, but a likeness of the essential nature of the symptoms as disclosed to the perception of the provers and patients, and the observations of others who may be capable of judging the objective phenomena presented.

*Stramonium*.—In many of its pathogenetic elements, this drug stands in relation to Belladonna, much as China does to Arseni-

cum. The similarity of their symptoms, though great, often finds the difference which negatives identity in the degree of their intensity, Stramonium, in this comparison, representing the minor quantity. Each of these remedies, of course, presents numerous other elements distinctly characteristic of each, concerning which no question will arise as to the selection of either, when their counterparts are met in examinations of the sick; while in relation to those which are similar, the practitioner will often find himself thrown upon this quantitative difference, as his chief guide in exact prescribing. In the group of these similar elements where we meet the greatest resemblance, and where we are oftenest compelled to rely on this difference of degree of intensity, we find many of the symptoms by which these drugs are related to scarlet fever. This will fully appear when we come to present the symptoms of Stramonium. Before proceeding to this, we wish to call especial attention to this remedy in its relation to this fever. Its importance here has not always been fully appreciated. It is not too much to say that as the disease is met at this day, and in this locality, it is as often called for by the law of similars as *Belladonna*, perhaps oftener. And further, as to these two relatives, it is not enough for good practice, to follow the one with the other, if that first given fails to produce the desired result. This will too often end in fatal consequences, for one of two reasons. If the one be appropriate the other is not, for though similar they are not identical. Nor, indeed, are they similar, but often quite different, in those elements which decide the choice of a remedy according to the law of cure. If, then, by mistake or neglect, that is given which is not similar in these elements, and therefore *not* appropriate to the case, it is not a mere negative proceeding, leaving the case after the action of the drug (which cannot be curative for lack of the requisite similarity), where it was when this wrong selection was made.

The action of drugs on the living organism is a positive action, never a mere negative one. If not in the curative direction, and it can never be if the similarity of its characteristic effects to the characteristic phenomena of the disease be wanting, it must be in some other, and that of necessity more or less an opposite one, and therefore hurtful. The extent of this pernicious action will be

conditioned by the susceptibility of the patient and the quantity and repetition of the doses of the drug. The first element of this condition will vary much in different diseases and in different examples of the same disease. This difference is determined by, and is the result of, that newly created susceptibility to drug action which ever arises with the first results of the action of the morbid cause. It is this susceptibility which has necessitated the reduction of doses of drugs adapted to the removal of these results, till that which the most enlightened experience has discovered to be productive of the maximum of good, is found to be so small that the faith of many is still unable to receive the truth. If the action of the drug selected happens to be in the opposite direction of that which is curative (*i. e.*, antipathic), as is not unfrequently the case in the selection of Belladonna in scarlet fever, where this increased susceptibility is great, the morbid action cannot fail of being intensified, and the result will be, as it has often been, fatal.

It can hardly be necessary to say that the second condition—the magnitude and repetition of doses of inappropriate drugs—is mischievous in the direct ratio of these elements. And yet it is first in the memory of all who have had much experience in treating grave affections like the fever under consideration, especially of those who have been much sought as counselling advisers in such cases, that too often there has been sad evidence of the hope, that it might be possible, if large enough quantities of even a wrongly selected drug could be given, and often enough repeated, this would at last, in some unknown way, work out the results which can only follow the use of that which is strictly similar. And that not unfrequently, this use of that which is similar, being resorted to in doubt of its true character, as in ignorance of the importance of this fact, has been followed by consequences scarcely less sad.

The other reason of fatal consequences, from the error we have discussed, is the loss of time given to the development of the disappointment which must result from the use of wrong remedies. In diseases of slower progress in destructive processes, this loss may sometimes be repaired, or even be of no very great detriment, but the case is quite different where the advance, from initiation of morbid action to complete destruction of life, is so rapid as is



often witnessed in this fever. Here, if there is to be any success of treatment, it must come from first efforts, for there is often no time allowed in which to remedy the mischiefs of a first mistake. Even if there be no added intensity to the diseased activities from the effects of wrong remedies, or, which is nearly as bad, from the wrong use of those which are right, the rapid exhaustion of the vital forces by the morbid poison is so great, that the whole sum of them are soon brought to that point below which curative responses to the action of any remedy are impossible. There cannot therefore be too great caution in deciding between the claims of two remedies where the similarities are so great as in the case of Bell. and Stram., in cases where a mistake may be followed by so sad results, and which there can be so little opportunity to repair.

The following symptoms of Stramonium are translated from Vol. II, of *Jahr's Symptomen Codex*:

Violent convulsions of the limbs; convulsions in bed, of the severest kind, so violent that he must be restrained; frightful convulsions at the sight of bright shining things, as light, a mirror, or the surface of water; convulsions with delirium, especially excited by being touched; convulsions first of the left arm, then of the right leg, then very quick of the head; violent of the muscles of the lower jaw, lips, of the left arm and right leg; shocklike jerkings, of the left leg especially, which is drawn up towards the body; spasmodic jerkings of the limbs; slow contractions and extensions of the limbs in paroxysms.

[Paralytic trembling of the arms and hands, especially of the right, with which he constantly reaches into the air, and attempts to grasp some imaginary object; at the same time the power to direct the hand to the desired point, at will, was sensibly impaired.]

*Restlessness* [with itching of the skin; great restlessness with moaning; throwing up the arms and legs, but most with the arms, with opening and shutting of the hands and many motions of the fingers; tossing about in the bed; in spells of restlessness he would drink when it was offered him, but he did not ask for it].—Williamson.

Red miliary rash on the chest and back, paler in the morning,

in the evening more abundant and deeper red, made more apparent by warmth, followed by exfoliation of the skin. Many small, shining, star-shaped petechiæ on the face, neck, and chest.

[Face and breast of a coppery red color, somewhat mottled, similar to the color of a North American Indian; the sclerotic coat of the eye of a pink color. Eruption visible on the left knee, not on the right. An old cicatrix on the forehead was very red. The *alæ nasi* and space round the mouth and a spot on each temple were white. Restlessness with itching of the skin (case of poisoning, by W. Williamson, M.D.). Face covered with patches of an irregular shape, not elevated above the rest of the skin, of a fiery red color ("Case of Poisoning," by Carroll Dunham, M.D.). Face became of a deeper scarlet than is ever seen in scarlet fever, and the neck and throat, as well as the face, were covered with a multitude of small spots of a brilliant red color, many of which were star-shaped (Dr. Meigs). The skin of the body except the head was reddened dry and hot. *Frank's Magazine*.]—*American Homœopathic Review*, Vol. IV, p. 556, *et seq.*

The skin of the whole body covered with a smooth, red eruption, which was dry and burning hot, so like the characteristic eruption of scarlet fever that no difference could be perceived. It was in broad patches, with small interspaces, accompanied by much itching. [*Case of poisoning, observed by myself.*]

Quiet sleep, especially after the convulsions; constant deep sleep, also with snoring and occasional drawing up of the legs, or with very deep inspirations, drawn with great effort. Coma, with rattling respiration, bloody froth at the mouth, and dark-brown face. Restless sleep at night. Wakes with screaming and howling. In sleep, lies on the back, with open staring eyes.

Great heat of the skin towards noon, with redness of the face, vertigo, and lachrymation; with small, quick pulse, and cinnabar redness of the face; with talking in sleep. Pulse small, quick, rapid, and irregular, or finally, hardly perceptible; strong and full; hard and full. Perspiration with great thirst; cold over the whole body.

Great angry irritability; strikes those around him with fearful outcries; great desire to bite, and to tear everything, even his own limbs, with his teeth; rapid alternations of laughing, crying, and singing.

Stupidity; sees nothing, does not know his own relatives; grasps about with the hand, and stamps with the foot; he recognizes nothing about him; takes his book to go to school, but thoughtlessly takes the wrong door; hears speaking in his stupefying slumber, but understands nothing; surrounding objects appear very small to him, whilst he himself seems large and noble; he believes he sees many persons, and grasps at them; frightful illusions, with shrinking or expression of terror in his countenance; thinks he sees spirits; imagines a dog is about to attack him; screams because of dogs, cats, and rabbits, which approach him from all sides; many terrifying phantasms, which appear more to one side than directly in front of him; loquacious delirium; mild delirium; timid or terrified delirium; muttering; screaming till he is hoarse and loses his voice; terrified raving; very loquacious raving; springs out of the bed at night and screams that the disease will burst out at his head; starts up in great anguish and with violence; screams that she shall fall; clings to her mother desparingly, then whistles, points to flying gnats, which she endeavors to seize; laughs and whimpers; loss of recollection, with internal restlessness.

Dulness of the head; difficulty of thinking; sensation of weakness and unpleasant lightness in the head; [quite characteristic] deafening (betaubung) of the head, with clouded sight; beclouding of all the senses; insensibility to external impressions; loss of the sense of feeling; after beclouding of all the senses, an eruption of a red rash on the back, with perspiration; vertigo, with redness of the face; vertigo, with constant drawing backwards of the head and great drowsiness. Heaviness of the head. Pains in the head of the severest kind, with pains in the eyes; dizzy headache, with fainting and thirst; squeezing headache; throbbing headache, also especially in the vertex, with attacks of fainting, or in the night coupled with diarrhœa; congestion of blood to the head; heat in the head, with sparkling eyes; convulsions of the head (and of the arms), also with hiccough, especially in the morning; spasmodic drawing of the head, also with snoring and grinding of the teeth, and convulsed eyes, or with screams and throwing the arms over the head; frequent raising of the head from the bed.

Swelling of the eyes, also distortion of the eyeballs and dilated

pupils; lachrymation of only the left or right eye, or of both, with cloudy sight, great sensibility to light, which causes tears to flow; eyes are closed, only opened when spoken to; sparkling eyes; staring eyes, also with aspect as if drowsy; eyes dull and cloudy; paralysis of the upper eyelid; pupils dilated; also from the outset, or with cloudy sight; pupils dilated and immovable; pupils contracted, even in the dark they are hardly at all dilated; entire loss of sight and hearing, or sees and hears very badly.

Redness of the face, also purple-colored, with staring of the eyes, with very red cheeks and lips; trembling of the lips as well as of the hands and feet; dryness of the lips as well as of the tongue.

The mouth as if raw over the whole inner surface; great dryness of the mouth, which does not allow the swallowing of a bit of bread; it tastes also like straw; the dryness extends to the throat, and compels frequent drinking and moistening of the mouth; tongue very dry; dry and rough, as is also the palate; hot and dry, as also the throat; swelling of the tongue, so that it hangs from the mouth; paralysis of the tongue, with trembling while protruding it; organs of speech as if paralyzed; stutters, without being able to utter a single word; constant mutterings.

Swallowing is difficult, with shooting pain in the throat, or with pressure in the submaxillary glands; complete inability to swallow, on account of dryness of the throat.

As in the case of the symptoms of Belladonna, many of these of Stramonium, so far as they disclose affection of the brain, are indicative of inflammation, or of its results. Mixed with these are others of a different nature, and this mixed character of the symptoms of Stramonium is one of the first and important facts which arrests the attention of the student of its action on the living economy. There is in this, with the inflammatory phenomena, another class, which indicates that the drug has seized on the nerve-fibre itself, modifying its functions in a very remarkable manner. There is a peculiar excitability and mobility of the nerve-system disclosed, by the character of the convulsions, trembling, restlessness, etc., which is worthy of careful study, the like of which is found in no other drug. It is to a great extent in these extra-inflammatory symptoms that the distinguishing differences between

this drug and Bell. are to be learned. We have said they are peculiar; we know no better word by which to characterize them. They are evidently not inflammatory; they are very distinct from torpor; they are not paralytic, though they partake more of this character and tend more to this state than do the corresponding symptoms of Bell. They seem to consist essentially in an *erethism* of the nerve-fibre itself, which rapidly exhausts its functional susceptibility, and soon ends in its entire suspension, if the dose be large, or its action be not soon interrupted by the use of appropriate means.

The symptoms of the skin, sleep, and fever are such as are commonly met in scarlet fever; those of the skin, especially, are a more complete picture of the eruptive feature of the disease than is found in the pathogenesis of any other drug; while those of the disposition, intelligence, head, etc., disclose distinctly an inflammatory state of the brain analogous to important elements in the pathology of the fever we have so often to combat. The inflammatory symptoms of the head affections are less marked and demonstrative than the corresponding symptoms of Bell. Though similar in kind they are less in degree. This, with the mixed symptoms of *erethism* already mentioned, will be quite sufficient guides to a right selection of *Stram.* in the treatment of this formidable malady. The importance of being able to decide at once and with certainty on that one of these which is especially appropriate to a given case, can hardly be overestimated. The difficulty lies in the similarity of the general affections they produce. This is removed by a knowledge of the specific symptoms which accompany these, and which differ very greatly. To exhibit as plainly as possible this similarity and this difference, and thus to secure our practice as far as possible from the frequent error of giving the one where the other is required by the law of similars, has been judged of sufficient importance to warrant a repetition of the symptoms of these drugs in parallel opposed columns. It is believed a study of them in this relation will fully justify the view taken of the nature of the symptoms of each, and make the discrimination of their differences comparatively easy, and that there are sufficient considerations to warrant the appropriation of the space on our pages which the repetition of symptoms will require.

In making this comparative study, let it be remembered here as ever, that while it is the *similarity* of the symptoms of the drug to those of the disease which constitutes the one as curative of the other, it is just the opposite of this, as between the choice of two similar drugs for the cure of a given case. It depends wholly on the greater similarity of those elements in which *they differ*, to the symptoms of the disease, to decide which is the true curative.

## BELLADONNA.

*Convulsions* with outeries and loss of consciousness; with delirium; with distortion of the eyes, and contraction especially of the flexor muscles; with jerkings, especially of the hands and feet, loss of touch, and loose rattling of mucus in the bronchi. Rigidity, with bending of the body and head backwards or to the left side; rigidity or immobility of all, or of only a single limb, sometimes with loss of sensation, distended superficial veins, red and turgid face, full quick pulse, and copious sweating.

*Trembling*, of the limbs, also with convulsive shakings; with weariness; in the heart, forenoons.

Great *restlessness* of the limbs, especially of the hands and feet, and also of the head, compelling a constant moving and change of their position.

*Skin.* Scarlet spots and scarlet redness, especially on the face, throat, chest, abdomen, and hands, with acute swelling of the parts; sometimes with rapid, small pulse, tightness of the chest, violent cough, delirium, increased activity of memory, rubbing of the nose, and distended pupils. Erysipelatous inflammations, also with swelling, or even with gangrene of the parts. Redness, inflammation, and swelling of the entire skin of the body.

## STRAMONIUM.

Violent convulsions of the limbs; convulsions in bed, of the severest kind, so violent that he must be restrained; frightful convulsions at the sight of bright, shining things, as light, a mirror, or the surface of water; with delirium, especially excited by being touched; first of the left arm, then of the right leg, then very quick of the head; violent, of the muscles of the lower jaw, lips, of the left arm and right leg; shocklike jerkings, especially of the left leg, which is drawn up towards the body; spasmodic jerkings of the limbs; slow flexion and extension of the limbs, in paroxysms.

Paralytic *trembling* of the arms and hands, especially of the right, with which he constantly reaches into the air, and attempts to grasp some imaginary object, at the same time the power to direct the hand to the desired point was sensibly impaired.

*Restlessness* [with itching of the skin; with moaning; throwing of the arms and legs, but most of the arms, with opening and shutting of the hands, and many motions of the fingers; tossing about in bed in spells of restlessness; he would drink, when it was offered him, but he did not ask for it.]—Williamson.

*Skin.* Red, miliary rash, on the chest and back, paler in the morning, in the evening more abundant and deeper red, made more apparent by warmth, followed by exfoliation of the skin. Many small star-shaped petechiæ on the face, neck, and chest.

[Face and breast of a coppery red color, somewhat mottled; the sclerotic coat of the eye of a pink color. Eruption visible on the left knee, not on the right. An old cicatrix on the forehead was very red. The *alæ nasi* and space

## BELLADONNA—continued.

*Sleep.* Coma. Stupefying coma, like lethargy, with deep sleep and snoring respiration, lying motionless, occasionally opening the eyes with wild look, or jerking of the tendons, pale cold face, cold hands, and hard, small pulse. Wakes with a start and fright, especially on going to sleep, sometimes with sweat on the forehead and epigastrium, and fear as if something under the bed made a noise. Restless and tossing.

*Fever.* Dry, burning heat; internal or external heat or both at the same time. During the heat, delirium and redness of the face. Pulse strong and rapid, or small and quick. Perspiration, cold on the forehead, bursting out suddenly; in bed, of the whole body, from the slightest covering, also only on the parts covered, evening and morning; stains the linen dark color; during the sleep, also in the daytime.

*Disposition.* Unwillingness to speak. Indifference. Apathy, on which nothing makes an impression. Answers only with anger and outcries. Increased susceptibility of all the senses; all impressions on these are too strong. Howling and outcries for the merest trifles, increased by being spoken to.

*Intelligence.* Intelligence, with convulsions, especially of the arms. Loss of consciousness. Stupidity. Insensibility, as if in a dream, also in the evening, in bed. He neither sees nor hears. He recognizes no one, even his relatives, especially by the sense of hearing. He does not know whether he sleeps or wakes. Illusions of the senses and imaginations. Delirium, especially at night; with a staring look; murmuring delirium. Vertigo,

## STRAMONIUM—continued.

round the mouth and a spot on each temple were white. Face became of a deeper scarlet than is ever seen in scarlet fever, and the neck and throat as well as the face were covered with a multitude of small spots of a brilliant red color, many of which were star-shaped. The skin of the body except the head was reddened, hot, and dry. The skin of the whole body covered with a smooth red eruption, which was dry and burning hot, in broad patches, with small interspaces and much itching.]

*Sleep.* Quiet sleep, especially after the convulsions; constant deep sleep, also with snoring and unusual drawing up of the legs, or with very deep inspirations, drawn with deep effort. Coma, with rattling respiration, bloody froth at the mouth, and dark-brown face. Restless sleep at night. Wakes with snoring and howling. In sleep, lies on the back, with open staring eyes.

*Fever.* Great heat of the skin towards noon, with redness of the face, vertigo, and lachrymation; with small quick pulse and cinnabar redness of the face; with talking in sleep. Pulse small, quick, rapid and irregular, or finally, hardly perceptible; strong and full; hard and full. Perspiration with great thirst; cold, over the whole body.

*Disposition.* Great anger and irritability; strikes around him, with fearful outcries; great desire to bite and tear everything, even his own limbs, with his teeth; rapid alternations of laughing, crying, and singing.

*Intelligence.* Stupidity; sees nothing, does not know his relations, grasps about with his hand and stamps with the foot; he recognizes nothing about him; hears speaking in his stupefying slumber but understands nothing; surrounding objects appear very small to him, while he himself seems large and noble; he believes he sees many persons, and grasps at them; frightful illusions, with shrinking or expression of terror in his countenance;

**BELLADONNA—continued.**

with trembling of the hands; with dulness of the senses; with nausea.

*Head.* Heaviness of the head; in the forehead, especially over the eyes, with pain in them when touched, and difficulty of opening, especially in the morning on waking; pressing heaviness in the occiput, or towards the temples, with diminished hearing; heaviness like drunkenness, with vertigo. Outward pressure in the head, with sensation of bursting, especially in the forehead, as if all would come out forwards. Tearing in the head, especially in the forehead over the eyes; on the vertex, worse on motion and while pressing on the head, with sensation of thinness of the skull. Shootings to the temples outwards, or in the temples. Pressing shootings in the temples, or to all sides of the brain. Cutting shootings, as if with knives, especially in the evenings, in the whole head or only in the occiput. Shootings from one temple to the other. Throbbing in the whole head, after pressing cutting. Pressing throbbing in the occiput. Strong pulsation of the arteries of the head, especially of the forehead and temples, or with sensation in the bones of the forehead as if they were raised up, or in the morning after waking, with pulsations in the whole body. Heat in the head. Painful sensibility of the hairy scalp to the slightest touch, even of the hair. Convulsive shaking and bending backwards of the head.

*Eyes.* Red, injected conjunctiva, also with shootings and tears. Spasms of the eyelids. Eyes open wide. Eyes prominent. Immovable, sparkling,

**STRAMONIUM—continued.**

thinks he sees spirits; imagines a dog is about to attack him; screams because of dogs, cats and rabbits which approach him from all sides. Many terrifying phantoms, which appear more to one side than directly in front of him; loquacious delirium; wild delirium; timid or terrified delirium; muttering; screaming till he is hoarse and loses his voice; terrified ravings; springs out of bed at night, and screams that his disease will burst out at his head; starts up in great anguish, and with violence screams that she shall fall; clings to her mother despairingly, then whistles; points to flying gnats; which she endeavors to seize; laughs loud and whimpers; loss of recollection, with internal restlessness.

*Head.* Dulness of the head; difficulty of thinking; sensation of weakness and unpleasant lightness in the head. Deafening of the head, with clouded sight; beclouding of all the senses; insensibility to external impressions; loss of the sense of feeling; after beclouding of all the senses, an eruption of red rash on the back, with perspiration. Vertigo, with redness of the face; vertigo, with constant drawing backwards of the head and great drowsiness. Heaviness of the head. Pains in the head of the severest kind, with pains in the eyes; dizzy headache, with fainting and thirst; squeezing headache; throbbing headache, also especially in the vertex, with attacks of fainting, or in the right temple and with diarrhoea. Congestion of blood to the head; heat in the head, with sparkling of the eyes. Convulsions of the head (and of the arms), also with hiccough, especially in the morning. Spasmodic drawing of the head, also with snoring and grinding of the teeth, and convulsed eyes, or with screams and throwing of the arms over the head. Frequent raising of the head from the bed.

*Eyes.* Swelling of the eyes, also distortion of the eyeballs and dilated pupils. Lachrymation of only the left or right eye, or of both, with cloudy



**BELLADONNA—continued.**

brilliant. Distorted or in convulsive motion. Glassy. Red. Great sensibility to light, with spasmodic turning of the eyes from the light. Pupils contracted, or much dilated and immovable.

*Ears.* Deafness, as if a membrane were drawn over the ears. Increased sensibility and repugnance to sounds.

*Face.* Burning heat and redness, especially of the cheeks, as if after drinking wine, with congestion of blood to the head, or with violent headache and ice-cold extremities. Red, scarlet spots on the face, also with strong pulse. Convulsions of the lips. Distortion of the mouth. Lips dark-red and dry.

*Mouth.* Great dryness of the mouth, extending to the throat and nose, the larynx as if constricted, hindering swallowing, also with or without thirst. Bloody froth at the mouth, with grinding of the teeth and shaking of the head. Mouths of the salivary ducts excoriated, as if corroded. Sticky slime in the mouth, for the most part with sensation of dryness. Foul smell from the mouth, as if from disordered stomach. Tongue cracked, red, hot and dry. Papillæ bright-red, inflamed, and swollen. Trembling of the tongue. Heaviness of the tongue. Paralytic weakness of the organs of the voice. Difficult and stammering speech, also like that of drunkenness, with full consciousness and dilated pupils. Nasal speech. Loss of speech.

*Throat.* As if raw and excoriated, especially when swallowing, touched with the tongue, or chewing. Burning in the throat and fauces, especially when swallowing food or drink. Shootings and pain as if swollen, only when swallowing, turning the neck, or feeling of the throat. Inflammation, swelling, and redness of the throat and fauces, palate, uvula, and tonsils. Swallowing painful, difficult, or entirely prevented, even of fluids, which return through the nose. Impossibility of swallowing, with aversion to swallowing liquids, even to madness.

**STRAMONIUM—continued.**

sight. Great sensibility to light, which causes tears to flow. The eyes are closed, only opened when spoken to. Sparkling eyes. Staring eyes, also with aspect as if drowsy. Eyes dull and cloudy. Paralysis of the upper eyelids. Pupils dilated, also from the outset, or with cloudy sight. Pupils dilated and immovable. Pupils contracted; even in the dark they are hardly at all dilated. Entire loss of sight and hearing, or sees and hears very badly.

*Ears.* Hearing entirely gone. Deafness. Illusions of the hearing.

*Face.* Redness of the face, also purple-colored, with staring of the eyes, with very red cheeks and lips. Trembling of the lips as well as of the hands and feet. Dryness of the lips as well as of the tongue.

*Mouth.* The mouth as if raw over the whole inner surface. Great dryness of the mouth, which does not allow the swallowing of a bit of bread; it tastes like straw. The dryness extends to the throat, and compels frequent drinking and moistening of the mouth. Tongue very dry. It is dry and rough, as is also the throat. Swelling of the tongue so that it hangs from the mouth. Paralysis of the tongue, with trembling while protruding it. The organs of speech as if paralyzed; he stutters without being able to utter a single word. Constant muttering.

*Throat.* Swallowing is difficult, with shooting pain in the throat, or with pressure in the submaxillary glands; complete inability to swallow, on account of great dryness of the throat.

*Lachesis.* We have already called attention to this remedy in speaking of the treatment of the torpid variety of the disease before us. In recurring to it here, our object is to point out more particularly the indications for its use. It is worthy of remark, that though, in general, *Lachesis* has so many resemblances to *Belladonna* as to be rightly regarded as one of its nearest relatives, in scarlet fever they are oftenest in relation to conditions the exact opposites of each other, the symptoms indicative of *Bell.* being sharp and demonstrative, while those of *Lachesis* declare threatening gangrene or destructive decomposition of both fluids and solids. Instead of active strong pulse, hot, dry skin, glowing redness of the face and injected eyes, throbbing pains in the head, etc., we have a cool surface, perhaps covered with cold perspiration; torpid, peripheral circulation; passive hæmorrhages of dark fluid blood; sloughing ulceration of surfaces where the specific effects of the poison are more especially localized; acrid or foul secretions, etc. The swellings to which the two are related are also quite unlike. *Bell.* belongs to those of the glands, with the phenomena of acute or of the acutest inflammation; while that of *Lachesis* is of the cellular tissue, threatening suppuration or gangrene, the whole tone of the general phenomena being of a lower grade than that which is so characteristic of its relative. This is notably true of those about the throat, of which more hereafter. It is of the utmost importance to distinguish these differences in practice, and to select the remedy appropriate to the given case in the first instance, for if we fail to do so then, it is more than likely we shall have little opportunity to amend this mistake. If the process of destruction now set up, of which we are so plainly warned by these accidents, be not met and conquered at the outset by the administration of the appropriate remedy, the case will soon pass beyond the reach of help from any, however judicious may be the selection, later in the history of the case. Of the variety of the fever characterized by these swellings, we shall speak more particularly hereafter. It is only alluded to here for the purpose of illustrating the contrast between the action of these drugs, which we wish to present in a manner to elucidate, as far as possible, the place of each in the treatment of this formidable disease. It will be seen at once, we think on only a cursory

glance at their pathogenesis, that they here belong to opposite conditions, and can never be substitutes for, nor alternates of, each other. The nearest to this which can occur is, that Lachesis may rightly follow Bell. if from the use of this we have failed of curative action, where it seemed appropriate, and the case has progressed, notwithstanding its use, to that lower plane of action which we have pointed out as indicative of the condition which calls for the use of Lachesis.

In the treatment of that variety of the fever characterized by acute inflammatory action in the brain, it must be apparent from what has been said, that Lachesis is not likely to find an extended use. It will not be difficult, however, to place its proper sphere in that class of cases where the symptoms indicate a low grade of inflammatory action, and where a fatal issue is not so much to be feared from inflammation and its consequences, as from exhaustion of the vital forces from the direct action of the morbid poison upon them. In its relation to the inflammatory cerebral variety its place seems to be below that of Stram., Hyos., Sulph., and Rhus. The moral symptoms are scarcely at all like those of acute cerebral inflammation, and the intellectual but slightly so. Inability to think acutely and continuously. Great weakness of the memory; listening is very difficult; the words spoken seem immediately to be wiped away. Entirely without memory; he neither hears nor understands what others say, though he can still think correctly. These are all. The symptoms of the head are something more positive. The pains of the head are deep within, and are aggravated by external pressure. Or they are dull in the forehead, or whole head, with nausea in the afternoon. Heaviness of the head in the occiput, forehead, or deep in the centre of the head, with vertigo, mornings, on waking. Pressing pain in the head, with nausea or with drowsiness; or under the whole skull, as if from taking cold, or with nausea alternating with heat, and much increased by stooping. It is great in the morning, with strong congestion to the head. Constriction of the head over the ears, with pressure to these, under both temples. The tensive pains in the head are relieved by external pressure, and are sometimes accompanied by whizzings and rushings (*saussen*) and sensation of heat in the head. Shootings in the vertex (*scheitel*), also

from the eyes to the vertex, or in the temples, or in the whole head, as if from knives, with *stiffness of the neck*. Throbbing pain, with beating from every motion, causing nausea, and efforts to vomit, with painful boring in the vertex. Great congestion of the head; heat of the head.

These are symptoms which may be met in cases of cerebral inflammation, and these will most certainly find their curative in Lachesis. It sometimes happens, however, in these cases, that the head symptoms are not very definitely expressed, or are masked by the general condition of the patient, insensibility, or by the violence of other symptoms, as convulsions. This is not an uncommon experience in the cerebral inflammations of scarlet fever. The remedy is then to be found from a study of other and more general symptoms, less obscured by these accidents; being controlled in all cases by the resemblance of characteristic symptoms, and never by the fact that this or that remedy has cured other cases, which we believed to have been like that under treatment. It will be seen, most likely, on a careful study of the case of the variety of the fever under consideration, and where Lachesis is in place, the inflammatory state is one approaching, by its low grade, to a condition of torpor, if it does not really present positive symptoms of this state.

Having disposed of the first proposed division of the fever, including cases characterized by localized affection of the brain, we come, according to our plan, to those in which the most important local affections are found in the throat and in parts adjacent. These cases are various in their character, as to the tissues invaded—the processes therein set up—and their importance in relation to prognosis. The differences are apparent to the most cursory observation. There is no difficulty in recognizing them at the first glance, and the first obvious inference from this is, that these differences have their origin in different states of the life forces, as impressed by the morbid cause, or in a difference in the nature of this cause, which has produced the sum of the morbid phenomena with which we have to deal, or in both.

We meet cases with simple inflammation of the mucous tissue, in which appears only redness of different tints, with little or no swelling, and comparatively slight febrile reaction. In others

there is swelling of the tonsils, palate, uvula, and the submucous tissue. Others, with the internal affections named, have swelling of the external areolar tissue about the neck and throat, with infiltration of this tissue first, and afterwards suppurations and sloughings, which greatly increase the sufferings and danger of the patient. Others have redness, swelling, and deposit on the mucous surface of the parts. In others there are sloughings of the internal surface of the throat, which present varied appearances as to color, outline, and depth of destruction. In others the inflammation has extended to the salivary glands, and caused swellings of varied extent and character.

These differences are so easy of recognition, so on the surface of the case, so to speak, that it would seem to the inexperienced that their right treatment should be for this reason simple and easy also. This, the more mature prescriber has already learned, is not the case. It may be there is no class of cases in practice where the real value of objective phenomena to the prescriber is more definitely fixed. It is certain that in a large number of these cases these are our only guides. The patients being infants or in early childhood, whatever we might, in other circumstances, learn from subjective symptoms is here denied us. We must often depend on what we can see only, for we have no other means of gaining specific knowledge. How little this brings us we have often and bitterly felt, when standing before the vanishing life we were expected to save. The truth is, there is to this ready recognition of the distinctions of these objective symptoms, no corresponding facility in discovering their cure. Only to a limited extent do they disclose the relationship between the disease and its specific curative. Not that they are, for this reason, of no value in prescribing, under the guidance of the law of similars, as some have contended, but their usefulness as guides, unaided by other facts, is of far less scope than the uninitiated are likely to suppose. This comes from two causes. First, and chiefly, the establishment of the relationship between diseases and their curatives, by the natural law which we recognize and obey, is not mainly in a resemblance of visible changes in appearances or in tissues, effected by the morbid cause on the one hand, and by the drug on the other. The practitioner who has reached the highest excellence

in the application of our art to the cure of the sick, when he looks back on his successes will acknowledge that for the most and the best of them he has been indebted to a knowledge of resemblances between the, to him, less apparent subjective symptoms of diseases and drugs. Though he may have been often helped by objective facts, as all have at times, still it is not to these he has been chiefly indebted for his successes, nor on these has he chiefly depended. He has discovered that an endeavor to found a practice on these chiefly, must necessarily be a failure. So it has ever been.

The similarity required by the law is not chiefly in this resemblance. If it were its application in practice would be comparatively of a limited use. If the law required similarity of objective phenomena, then it would require of the provings of drugs that they be carried to the extent of change in tissue, before they could be received as guides to practice. In addition to this the changes wrought by disease would of equal necessity be required to be brought to sight before prescription for their relief could be made on the basis of a law so conditioned. How impossible both these are, in practice, will appear if we consider tuberculosis, cancer, syphilis, variola, and others as requiring a counterpart in the provings, or if we take acute inflammations in either of the three great cavities of the body as examples of disease, an exact knowledge of the internal changes wrought by which we are to gain before prescribing. It is fully apparent before these examples, that the basis of a practice so founded can only rest on hypothesis, and never on law. And this is the exact difference between homœopathy and allopathy, as schools of practical medicine. Law the basis of the one, hypothesis of the other.

The second difficulty in the way of finding the curative from these objective appearances and differences, is in the necessary fact already alluded to. The counterparts of these are wanting in our *Materia Medica* to a very great extent. The provings of drugs have not been pushed to the extent of producing the foul sloughings, swellings, and suppurations with which we must deal. They have not been so pushed because they could not be. This is at least virtually true. There may have been cases of accidental or intentional poisoning which may have given us a few facts and

hints, but poisonings are not the most reliable of provings. The cases are very liable to be mixed up in their revelations, the symptoms of the poisoning drug with those of the administered antidote, so that the record is less simple, and therefore less reliable than those of more carefully conducted provings. The absence of these objective phenomena, or rather their unfrequent presence in our *Materia Medica*, has been urged against its perfectness and value by some, chiefly those who overestimated their importance. It has not been observed that these objectors have undertaken any very active personal labors to remove the alleged defect.

We all may regret that we have not more of them, especially when called to treat the class of cases we are about to consider, but few of us are, or are likely to be, willing to take Arsenic or Mercury till we experience gangrenous sloughings of our soft parts, or necroses of our bones. This is so, and is likely to continue so. And hence the great difficulty we meet at the outset of our attempt to treat these cases practically, or to give suggestions intended to aid the efforts of others; the difficulty is in the poverty of our resources. Admitting this, being limited in so great a majority of cases to these objective symptoms, by the age of our patients, and their consequent inability to respond as to those which are subjective, we will see how far the record or experience will enable us to deal with this branch of our subject, having, so far as we may, ever a reference to the law of similars.

The first remark we have to make is, that affections so differing in location and phenomena should be best met by any one supposed specific, that this should be blindly selected and given without regard to the individual characteristics of the case under treatment, or to the general differences which mark the varieties as we have stated them, is both absurd and criminal. This must be as obvious to the most inexperienced as to the most practiced; and as apparent to the slightest attention as to the most extended observation. And yet this whole class of cases, in all its variety, has oftener been treated in the past, it is safe to say, with the one drug, *Belladonna*, than with all others, so great is the power of practical habit. Especially is this true of the beginning of the treatment. This is explained by the force with which the idea of

a specific for classes of diseases has grasped the minds of practitioners, and it well illustrates the tenacity with which we are all disposed to cling to an idea which promises to save us labor. This practice has been persisted in these many years with ready confidence in each successive case, though it is certain it never yet cured or even benefited some of the forms of these throat affections. It also illustrates the power of that habitual deference to authority which has ever characterized the medical profession, and which, in the old school, compelled the continued drawing of blood for the cure of inflammations, for 3000 years, treating him as a heretic and an outlaw who should dare to call in question the necessity of this resort, though it has been established beyond question that all this while bleeding was injurious, increasing the rate of mortality and protracting the period of convalescence. What bleeding was to the mind of the old school in the treatment of inflammations, Belladonna has been, and is, in the new, in the treatment of scarlet fever. Both have been used without question and without thought, because of the words of authority. The difference is, however, that in the new, Belladonna once was a cure for this disease as it was then met; while from recent enlightened observations there is reason to believe that bleeding never was the great remedy for the class of diseases in which it was most practiced and trusted, that past generations confidently believed it to be. There is no such evidence of change in the nature of inflammations, in modern time, calling for change of remedies, as we have already seen in our discussion, has occurred in scarlet fever. In following the teachings and practice of antecedents, the old school was consistent with itself. It was never, in all its changes of opinion, other than a school of authorities. In successive generations the multitude followed the then dominant leader, never looking beyond his dictum. Hahnemann's appeal was from this to living facts—from theoretic dogmatism to the results of positive experience—to an experience the result of enlightened, careful, and protracted observation. By this he claimed to have discovered and established the great law of cure. The homœopathic school acknowledged the justice of this claim, and the importance of the methods by which he sustained it. And yet, by force of the habit which in all the past has been the



great bar to therapeutic progress, many of those who acknowledge the truth and value of Hahnemann's discovery are prone to forget the first cardinal principle which resulted, as the foundation of all practical duty—the necessity of strict individualization in every case of disease to be treated. Habit has suggested and still suggests, did not the master say Bellad. was the great specific for scarlatina? while Reason forgets to reply, that if the appeal be to the master, the whole current of his teaching declares that this can only continue true while the individualities of the disease and the drug continue to be *like* each other. If this similarity, by virtue of which alone the drug ever was a cure of the disease, ceases to be, then the drug becomes only a neutral in the treatment, whatever may have been its importance in other circumstances. It has no power imparted by the dictum of the master, and we are to have no confidence in it, except as we see the required similarity. It may be convenient to entertain faith in general specifics. It makes duty easy, but it is not safe.

The duty of individualization is nowhere more imperative than in the treatment of scarlatina with important affections of the throat. This extends as much, if not even more, to the general as to the local symptoms. In relation to the first, the general, there can be no better method by which to carry out this duty than that given in the *Organon*. To take all the phenomena of a case into consideration, and give to each the attention its importance demands. Till this is done it can never be known what are the elements which individualize the case. There is nothing in the mind of the prescriber pertaining to the disease for which he is to find, in the known pathogenesis of drugs, a similitum. He is ignorant of the first elements of the problem he is about to attempt to solve. The more earnest care should be given to these general symptoms, because in them are often found the individualities of the case, and these are the elements which dominate all intelligent prescribing. In comparison with these, the redness of the skin and throat, which are so apparent and intrusive on the attention of the physician, are often of little importance. These general symptoms cannot be discussed in a general consideration of the subject, so great is the variety of form and combination in which they present themselves, even in successive cases of the

same epidemic. In different epidemics, of course, the variety (and consequently the vanity of any attempt at a succinct analysis of them), is increasingly apparent.

In regard to local symptoms, these are less numerous, and easier brought within the grasp of the prescriber. First he ascertains what of local changes from healthy appearances he can see, and then what of change in the sensations, from the natural state, does the patient feel. In finding the curative, these last are far more important than the first. Unfortunately, in too many cases, these are excluded by the age or condition of the patient. Still wherever they can be availed of, they greatly facilitate the selection of the true remedy. In applying these remarks to the treatment of the first form of throat affection, in the outset, we are to remember the same distinction is to be made here as in cases of local brain affection; the active, or those of inflammatory character, and the torpid, with tendency to rapid destruction of parts and life. The inflammatory being characterized by strong febrile reaction, the torpid by comparative or total absence of this. If the case for treatment be of the first variety, and the affection of the throat be of the simple character we have described, there will be redness, with but little swelling, difficulty of swallowing, proportioned to the intensity of the inflammation, the eruption a bright red, and permanent. If the color of this be removed by pressure of the finger it quickly returns. The symptoms of the fever, as heat, restlessness, thirst, delirium, etc., are moderate, and the case altogether one of no great severity, and its treatment so simple that it need embarrass no one. If, with the above symptoms of the supposed moderate character, the eruption be *smooth*, *i. e.*, free from elevated points which are visible and perceptible to touch, there is but one remedy needed, so long as the case remains free from complications with other difficulties, which may arise from accident, as taking cold, or from constitutional vice, as *psora*, or in other words, miasms which when brought into activity result in chronic diseases which are not cured by time or the unaided natural powers, and which becoming active in the progress of acute diseases, complicate their nature, and increase the difficulty of treatment and cure. This remedy is Belladonna.

It will probably afford prompt relief. There need be no ner-

vous excitement here to give *much* of the drug, or to give it *very often*, for fear a worse state will ensue if this is neglected. These symptoms are so characteristic of the drug that it will not fail if it has a fair chance, *i. e.*, if it be not given in too great quantity or too often, and if it be not interfered with by the presence of other drugs, as sometimes will happen from the nervousness and apprehension excited by the bad reputation of the disease, because of its known fatal tendency to assume sudden and unfavorable appearances and conditions. The thought is, perhaps, that this may be forestalled by the interposition of one or more drugs, the action of which it is hoped will anticipate and prevent this lapse, if only the patient receives enough of them. This a great mistake. Like as in many other instances, nervous apprehension here, by this resort, insures the realization of its fears by the very means it adopts to prevent it. It arrests, embarrasses, or destroys the action of the true remedy, if this indeed has been found; or it adds to the confusion produced by the action of the wrong, by increasing impressions, which are not curatives, from other wrongly selected drugs, till to the dismay of the prescriber he may find, when he least suspects it, the sum of these confusions to constitute the very evil he dreaded, and to avoid which he has resorted to the means which has produced it. To avoid all this let the prescriber be sure of his remedy first, before giving it, and then trust it for the desired result. If the remedy be the right one, it needs no supplementary aid; if not, then the patient needs something else, but not this. There can be not the slightest doubt in the mind of any enlightened and reflecting practitioner, that very many of these sudden and unfavorable changes in the progress of cases not yet disclosing malignant character, are the result of wrong and excessive medication.

But if the eruption be less bright, and shows a disposition to fade or recede from the surface of the body, and if the urine be small in quantity or its secretion *suppressed*, the case is of a graver character, and the remedy is not *Belladonna* but its near relative, *Stramonium*. That even in these comparatively simple cases when brought by these medicines to the exfoliating stage successfully, as they probably will be, accidents excepted, it may be well to give a single dose of Sulphur, with the object of pre-

venting sequelæ which may give trouble to patient and physician, perilling the one, and embarrassing the other. This will be indispensable if the exfoliation be retarded, as it may be, by accident or constitutional causes. If complications arise in the course of these simple cases, which modify their character, their treatment must be determined by the character of the complications and the symptoms by which they are declared.

If the case be one of the next in order of increased severity of throat affection, with marked swelling and difficulty of swallowing, the above remedies may be no longer called for, and others must be sought. At the same time it is never to be forgotten that the throat affection is only one element of the case, and can never have the exclusive attention of the prescriber, to the neglect of the other elements. For it is not infrequently the case that the clue to the true remedy for the difficulty in the throat is found by a careful study of them, or its choice is confirmed by a knowledge of their characteristics. The localized affection in the throat is only one element of a whole, important in comparison with the others in the ratio that its severity exceeds that of the others. Indeed, in those cases where this is most severe, it is seldom that life is lost in consequence of local destructions in the throat, these being only one of the important indications of the ravages the morbid cause has effected in the whole organism, and are rather declarative of the failure of the life forces to resist these, than dominant of the treatment of the case, still, though only one element in the case, they are often of very great importance in practice, in their turn teaching also the way to the specific remedy. This is more especially true in cases where the throat symptoms are of the gravest character.

With the above principles in mind, let us take a case of the severer simple inflammation of the throat, *i. e.*, one in which the throat affection is more intense than in that of the variety just considered. The swelling of the tonsils and uvula are considerable, as are also the difficulty of swallowing, and the febrile reaction, thirst and restlessness. The remedy will now be the same as before if the eruption be bright, permanent, and regains its color quickly when this has been expelled by pressure. It will be a reason for *Belladonna* if the color of the inflamed throat be

that of a moderately ripe red raspberry, or brighter. If it be darker it will be a reason for looking for another remedy, and the case will be found to be passing into one or other of the varieties to be hereafter considered. If the eruption be more of the miliary character *Ammonium carb.* may be the better remedy, and this feature be found to be one of the chief distinctions between this drug and *Belladonna* in their relations to this fever, and in this variety the cases in which this carbonate will be oftenest in place. If there be a temptation to its selection in those cases marked by a more rapid process towards a dissolution of life forces, in which the throat affection is characterized by sloughings with offensive secretions, because of the following symptom in its pathogenesis,—“*scorbutic cachexia, with disposition to decomposition and dissolution of the blood,*”—it should be borne in mind that in these cases of fever the destructive process, though involving both fluids and solids, is chiefly marked in the latter, while in the carbonate it is confined to the former. For this reason the remedy would seem to be contraindicated, so far as objective symptoms may be allowed controlling authority in deciding the choice of remedies.

Another remedy in the miliary variety of the fever, and one never to be forgotten in its treatment, is *Lachesis*. There can be no hesitation in conceding to it the first place, in cases where this character of the eruption is present, and the other symptoms are of the declarative kind to which we almost habitually assign *Belladonna* as the curative. If this remedy fails to arrest or favorably modify the case by abating the violence of the pains in the head and throat, that of the febrile reaction, thirst and restlessness, *Lachesis* will often succeed in effecting speedy relief and cure. The attention of the reader has been called to this agent as a possible remedy in those cases of scarlet fever, which rapidly pass to a fatal termination, through localized brain affection, and which are characterized by torpor. Its relation to the fever is not limited to this variety. Indeed, it may be questioned whether any one of the agents of our *Materia Medica* have a wider range of application in its specific treatment. It may be called for in cases in each of the varieties of the throat affection which have been named, and in many of these will be found superior to any other remedy.

In that now under consideration, with marked swelling and redness of the throat, with difficulty of swallowing, elevated papillæ on the tongue, severe pain in the head, flushed and turgid appearance of the face, great restlessness, the eruption of the miliary character, or if this fail to come to the surface, there is no remedy to compete with *Lachesis*. Let it be noted that most of the above symptoms, those of the throat, tongue, face, and head, are just those which will suggest *Belladonna* at first glance. But the character of the eruption, or its absence will decide against *Bell*. The case from which these symptoms have been taken was that of a boy seven years old. He had *Bell*. Its selection was governed by the intense pain in the head, red turgid face, red injected eyes, red swollen papillæ of the tongue, red swelling of the throat, with great difficulty of swallowing, all indicative and characteristic of *Bell*. There was *no eruption*. Still the case was clearly one of scarlet fever, and was so regarded unhesitatingly. It presented the physiognomy of this fever most perfectly. After twelve hours trial of *Bell*., there was no relief to pain or violence of the fever. It seemed to be the remedy, and was continued twelve hours longer, with no better result. There was still no appearance of the eruption *on the surface* of the limbs or body, though there was what was regarded as the rash, seen beneath the very thin fair skin of the patient, on the neck and inner surface of the arms, and on the chest. The trial of *Bell*. twelve hours longer was decided on by the reflection that it was best to adhere to the *most* appropriate remedy, for if this failed all others would probably fail as well. What was to be hoped from that which was less suitable, when that which was most had failed? The result was no better than before, and the remedy was given up. Then a substitute was to be found, and the first group in which to look for it was certainly in that of the cognates of the drug which had failed, and this notwithstanding the failure. Not because of this, but because it had failed in a case which presented so many of its characteristics. Therefore the curative was sought for among its near relatives, and there it was found. The patient got *Lachesis* on the evening of the second day. On the morning of the third, when the intelligent little patient was asked how he was, he responded quite cheerily "*all right!*" And so he was.

The eruption had come to the surface. The pain in the head was gone, the throat was relieved of its pain, and in a great degree of its difficulty of swallowing. He got no other medicine. The convalescence was rapid, complete, and with no sequelæ of any kind. The case was one of much more than average severity, and was thus "*cut short*," on the night of the second day, an experience I do not remember to have had in any case of like gravity, from the use of any other drug. Indeed, so rare is this "*cutting short*" in this fever, that some writers, and among them a late and very intelligent president of the Massachusetts Medical Society, declare it is never seen. The president said it was "impossible," "medicine was useless," and the "only function of the doctor in these cases is to stand between the patient and harm from interference by the ignorant attendants." It will be remembered that *Lach.* was given the second day. The result was instructive to the prescriber. It cured his patient, and himself at the same time of a false notion he had entertained of the relationship of this remedy being limited to the later and last stages of the disease.

Since the above was written, another case, differing from the one here related, has still further instructed the writer in the value and use of *Lachesis* in the treatment of this fever. The patient was a very intelligent lady, about 20 years of age, blonde complexion, nervous temperament highly developed, and when first seen was in the third day of her attack. She had been under allopathic treatment, which had failed to satisfy the patient and her friends, by giving them either relief or confidence. The patient had hot dry skin; rapid, small pulse, with but little force; great thirst, with difficult swallowing; severe pain in the head, with red, watery, prominent eyes; great restlessness; the eruption was *smooth* (the cutaneous papillæ were not raised), florid, diffuse, general, and permanent; the tongue red, with elevated papillæ. The patient got *Belladonna*, at 7 o'clock P.M. The next morning the pain in the head was gone, and all the other symptoms were greatly relieved. The remedy was continued, with apparently increasing benefit, for forty-eight hours longer, when the following changes appeared at the morning visit: The eruption had assumed the *miliary* character, was *patchy*, with raised cutaneous papillæ, quite perceptible when passing the fingers over the

surface of the body. The throat had increased its redness, swelling, and difficulty of swallowing. The submaxillary glands were considerably swollen, and sensitive to touch. The adjacent areolar tissue had commenced to swell, and was also sensitive to pressure. There was increase of fever since the evening before. The pulse was harder and more frequent. Why had the improvement ceased, and this new turn come over the patient? It was a disappointment. The case seemed so exactly a pattern of that form of the fever which Belladonna has almost uniformly been found a specific for, that, and especially after the marked improvement which followed its first use, a complete cure was confidently expected from it: Now it was no longer appropriate. I could find no cause for this unexpected change in any mistake or misfortune of nurse or patient. Lachesis was given the patient at 10 o'clock A.M. At 5 P.M. there was very marked improvement, and the whole train of evils vanished rapidly under its use. The result was equally as complete and satisfactory as in the case of the little boy. Since the treatment of this case the writer has given to Lachesis a careful study in order to settle, as far as he could, its relations to this fearful malady. He has been surprised to find them so extensive and well marked, and more surprised that he has not before detected them more clearly. He is convinced, that in cases characterized by the miliary form of the eruption it is second in value to no other remedy.

In the next variety to be considered, that where the inflammation has extended to the external areolar tissue about the throat and neck, there should be no time lost in finding the appropriate remedy, for failing in this, *in the beginning*, is oftener than otherwise a failure in all. The rapidity of the destructive process in these cases affords little hope of opportunity to amend mistakes if made here. There should be no faltering with the once supposed specific for this fever, for the loss of time, which will surely follow its use, will have sealed the error with the mark of fatality. Routine practice here has nothing to recommend it. It is the right thing, or nothing is just as good, and perhaps better.

In the very outset of such cases, if the sensitiveness of the swelling to touch and pressure be considerable, while as yet the swelling itself is not great, the febrile reaction is considerable, with great



restlessness, and there be, as yet, no marked indications of torpor, *Rhus tox.* is to be preferred to all other remedies. But, on the contrary, if the swelling be far advanced, hard, of dark color, and symptoms of torpor are already declared, *Lachesis* is almost our only hope. No other remedy is to be substituted for it but with loss. If the eruption has been of the patchy and miliary variety, it is an additional reason for giving this medicine. Indeed this was a sufficient reason for its use early, and then it would probably have prevented the case reaching the sad pass which we have just considered. If the swelling softens, and shows an ash-colored or livid spot at the soft point, the remedy should be given at short intervals while the patient is sustained by a nourishing diet, and stimulants if need be. This last resource of nourishing diet and, in sinking cases, stimulants, should never be omitted during the discharge of the suppuration and the casting off of the sloughing tissue. During this process\* *Lachesis* has the preference before all curatives, and should only give place to others when the symptoms unmistakably call for a change.

In the throat affections of this fever, exudations on the mucous surface are common, and quite various in character, as to color and consistence. In color, there are all shades, from white to dirty-gray, yellowish-white, ash-colored, or brownish. In consistence the variety is not less, running from tough, dense, white, leathery membrane, down through differences of density to that of a tenacious mucus. They differ in the degree of adhesiveness with which they are attached to this surface, from that which is separated with great difficulty, to the secretion which is readily washed away. They are also various in their significance of danger. While some are indicative of utmost danger, others are found in cases which are comparatively manageable. In those cases where, beneath the deposit, the surface inflames, and secretes a thin ichorous, offensive, and corrosive fluid, which inflames other surfaces wherever it touches, and where this process has extended itself over the throat and nasal passages, the danger is exceedingly great. If it extend into the larynx, the danger is greatly increased, and the case is too likely to become fatal. This is true also of those

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\* See Am. Hom. Review, vol. iv, p. 362.

cases with the diphtheritic process extending into the air-passages, with symptoms of croup. The remedies for this variety of the exudation are Ailanthus, Ars., Carbo veg., Hepar, Lach., Merc. and Rhus tox. The selection of either is to be governed by the individualities of the case. The Ailanthus to have especial attention if the case be of marked adynamic character; Hepar if it be threatening the larynx. Carbo veg. is here to be held in remembrance, as is also Lachesis. The selection should be made with utmost care, as there is not likely to be time for repairing the fruits of carelessness, when this has been guilty of blundering. Ars. and Ailanthus, are very like in their relations to this dangerous form of the malady, if we may judge from the experience of Dr. Chalmers, as given in his reported cases. The choice of Lachesis is called for by the character of the eruption and the general characteristics of the fever and general symptoms.

In cases with the dense diphtheritic deposit, Lachesis should always be borne in mind, and given without hesitation in cases where there is in the symptoms no clear indication for some other remedy. The Protoiodide of mercury has been regarded by some practitioners as a specific for this deposit. This is probably an over-estimate of the value of the remedy, though there is evidence of its value in many cases in the testimony of those who have used it.

In case of sloughings in the throat, or when these are threatened, Lachesis is one of the chief reliances. The Bichromate of potash should be remembered in this variety of throat affection where there is a copious secretion of tenacious stringy mucus, and also in cases where ulcers are formed under exudated substances on the fauces and tonsils. The Ailanthus proved curative in several of Chalmers's cases where sloughings in the throat were a marked feature, and this where the severity of other elements with this, made the outlook most unpromising. When the sloughings occur in adynamic cases it should not be forgotten. Arsenicum may be of service to the sloughings where the other elements of the case are similar to its symptoms.\*

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\* In the very early years of my professional life, I was invited by a class-mate to see a case of scarlet fever with him, in Boston. The patient was about 20 months old, fat, and before this attack had been healthy. The face and throat were much swollen, the teeth and lips were covered with black

Inflammation and swelling of the glands of the neck, throat, and the salivary apparatus are common in this fever, and often troublesome to both patient and physician. The importance of this complication is determined by the number of the glands involved, the extent of the swelling, and the character of the fever present. Where this is of a marked adynamic character, this condition of the gland is often indicative of danger, to which it contributes in no small degree. If the swellings are small, and limited to one or two of the glands, they will be found no great obstacle to a recovery. But where the swellings are large, or these have passed into ill-conditioned suppuration, they add considerably to the gravity of the case. At the beginning of the swelling, if it be painful to touch, with vigor of febrile reaction, Belladonna will be found the best remedy. If the pain and sensibility to touch be less, with less febrile reaction, give Mercury. If the swellings threaten suppuration, or if this have already begun, Hepar sulph. is the best remedy. If there be sensibility to touch, with little febrile reaction, and the case threatens to pass into torpor, Rhus tox. is called for; Sulphur in cases where Mercury has seemed indicated, but has not proved equal to arresting the swellings, which have progressed notwithstanding its use. If the case be of the adynamic variety, or be passing into this state, Ailanthus should be remembered. Six of the seven cases reported by Dr. Chalmers had swollen glands, and one of them had passed into suppuration. As has been remarked, all recovered, and suppuration occurred in but one. If the case has passed into suppuration, and the discharge is foul and sanious, and especially if it be bloody,

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sordes, there was ichorous, corrosive, and offensive discharge from the nostrils, the throat had ragged sloughs hanging from the tonsils, from which came an intolerable fetor. There was complete insensibility to all outward impressions, and the whole aspect was of the most unpromising character. I have given so much of the case to make place for the mention of what seemed to me then and now a very extraordinary prescription. A *strong* decoction of *Capsicum* in *vinegar*, in teaspoonful doses. The reason given for its use was its success in popular and domestic practice in the West Indies. The child recovered rapidly, much against my expectation, and to my surprise did not seem to be much distressed by the sharpness of the acrid doses. Is there any warrant for this in any proving of *Capsicum*?

or there be hæmorrhage from the ulcerated surface, Lachesis is to have preference over all other remedies.

In conclusion, let it be urged, as the most important of all considerations in treating this plague of plagues, in cases of great gravity everything belonging to success depends on getting in the *right remedy first*. Failing of this, in too many cases, it will be found all is lost. *Too late* is a fearful fact to note in the treatment, when even the right remedy has become useless because overlooked till all have become alike valueless. It might have been otherwise if this had been recognized and given in time. And then it is no matter of indifference that a wrong remedy has been given, for, besides the loss of precious time where there was none to spare, the action of the drug erroneously given is no mere negative factor in the difficulties to be subsequently overcome, but is a positive complicating agent of evil, greatly increasing the danger of the patient and obstructing the curative action of the agent, which given in the outset, and left to work out its own results, without impediment from other drugs, might have been equal to a perfect cure. It is never to be forgotten that the curative, in grave cases of scarlet fever, is to be put into the case *early*, and with no hindrance from the abomination called "*alternation*," and with no precedent erroneously given; or even the curative may cease this relation to the case and leave it without hope.

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## ARTICLE XXVI.—Three Months in the Old Hospitals of Paris.

*A Lecture, delivered before the Hahnemann Institute, in the Hahnemann Medical College and Hospital of Chicago, November 12th, 1875.*

BY R. LUDLAM, M.D.,

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LADIES AND GENTLEMEN:

There are *three* reasons why I should respond to your kind invitation for this evening: 1. Because, judging from past experience, another quarter of a century will elapse before my next visit to Europe. 2. Because you are interested in the subject

and object of my recent travels; and 3. Because it is my duty and pleasure to share the knowledge that has been gleaned for our mutual profit. For our motto should read like that of the little republic of Switzerland: *Un pour tous, et tous pour un*—one for all, and all for one.

Some of you will remember that, on the day of my departure, we met at the usual hour in this room. At the close of the lecture you bade me God-speed, and I promised that, if my life was spared, and your good wishes were realized, the class for 1875-76 should hear the story of my professional wanderings, and reap the benefit of my observations in a special line of study. This might be given as a fourth reason for seizing so convenient an opportunity to tell that story, or at least a portion of it.

The first steamships that crossed the Atlantic were not able to carry coal enough for more than half the voyage; the rest of the trip was made by sail. About the year 1828 a learned and competent authority in civil engineering published a pamphlet to prove that it never would be possible for such craft to float a sufficient quantity of coal to enable them to make the entire voyage by steam. The good ship in which I sailed from New York, only a few days after the loss of the ill-fated "Schiller," consumed sixty tons of coal daily, and when we touched at Plymouth, on the other side, had enough left for a three days' additional sail through the North Sea and the river Elbe to Hamburg. But the beer, of which a stock of four thousand bottles had been laid in before we left port, was all gone while we were yet one day out!

A doctor on shipboard is as certain to have his theory of seasickness, and his remedy for it, as spinsters and bachelors are to have their peculiar ideas of parental discipline. I felt confident that the drinking of so much beer, as well as of wine and of Seltzer water, with the inordinate eating of six meals a day, would upset the gastric equilibrium of most of our passengers, especially if we should be overtaken by a storm or rough weather. It seemed that such habits could not fail to predispose them to that wretched infirmity. Late in the journey we were doomed to three days and four nights of tossing and churning, and pitching and rolling, that proved the truth of my proposition, and gave me some little repute with a small coterie of friends as a medical prophet. For

every one of those peripatetic sponges soon set to work to wring itself free of the abominations which it had soaked up with such an avidity!

Making allowance for those unfortunates who, whatever precautionary measures they adopt, are certain to suffer from this disease, I am persuaded that many persons might avoid it by a continuation of the more regular habits of eating and drinking to which they have been accustomed on land.

But I am not here to amuse you with the detail of my experiences and observations on board ship. Nor can sea-sickness, unless in the form which recurs at a particular time of the day, be regarded as belonging to my specialty. Perhaps I should have followed the example of the rebel privateers, who burned a peculiar kind of coal that made no smoke, and thus hindered their pursuers from observing them, or keeping track of them, while on the high seas.

We landed at Cherbourg, on the French side of the English Channel, nine hours by rail from Paris, and the next evening our pleasant little party was safely ensconced in the gay metropolis.

Medically considered, Paris is the most wonderful city in the world, and yet, while Chicago has five medical colleges, she has never had but one. But that school was in successful operation when the seeds of the Reformation were being sown in Germany, and when Columbus made his voyage of discovery to America. Her oldest hospital was established nearly twelve hundred years ago, and she has had more famous teachers in medicine and surgery than any other city, whether ancient or modern.

What my emotions were on finding myself in such an atmosphere, you can perhaps imagine. To be four thousand miles away from one's office-bell, with ears that were emptied of complaints, with no list of visits to be made, and nothing to do but to look up these old centres of learning, and to turn *student* again, was a treat and a temptation that I could not resist. For, even in Paris, where there is so much to attract and to divert one's attention from his chosen pursuit, the earnest physician is inevitably drawn towards the medical school and the hospitals, and other objects are of secondary importance.

Indeed, there is good reason why this is true, and why the

antiquarian, as well as the doctor, should turn his steps towards these same institutions. For, during all the political vicissitudes of Paris and of France, her religious and social revolutions, and the unsettled condition of her affairs, which has become chronic, and perhaps incurable, her charitable institutions have never been burned down nor broken up. This is the great compensating element and fact in her curious history. Century after century has come and gone, but these fountains of mercy to the sick and the afflicted among her population have never been sealed. War and pestilence have spread devastation within and without this beautiful city, but, under the most threatening and cruel circumstances, the heart of these charities has been warmed for their inmates, and their ministers have always stood ready to bind up their wounds, and to set them on their way again.

The Frenchman may be on the crest of the wave, or in the trough of the sea, in so far as his individual experiences go, but he never forgets the hospital. The Frenchwoman may bestow a surplus of affection on a lap-dog or a kitten, a tan-colored terrier, or a chirrupy companion with his inevitable cigarette, but she will not fail to love the hospital. The rich are interested in them, because they afford an asylum to the needy and the destitute; and the poor, because they are a last and unfailing resource, a special Providence against the mutabilities of health and of fortune. They all magnify the grace of charity. Prisons and palaces may be destroyed, and their churches desecrated, but these monuments of mercy are touched only by the hand of Time. The Commune may burn the Hotel de Ville, but it will spare the Hotel Dieu. The mob may guillotine their kings, kill their archbishops, and persecute the clergy, but it will respect the physician.

Now, it is to the fact that these institutions have been allowed to pursue their course without interruption, and to perfect their appointments from generation to generation, that we must attribute the superior advantages of Paris as a medical centre. These hospitals have developed into rich storehouses of experience. With an abundance of clinical material in them, there has been no lack of opportunity for original investigation and study. Charcot showed us a patient who had been in the hospital La Salpêtrière for twenty-five years, first in the charge of his predecessor, and then of himself, but always under constant and careful observation.

The stability and permanency of these charities is a most important element in perfecting the work for which they were designed. The hospitals are under the control of the general administration, and do not, therefore, depend upon contingent and spasmodic subscriptions. There is not one of all the thousand places of amusement in the gay capital which does not pay its tribute to this practical benevolence. A tax of two dollars per year each on forty thousand dogs is only a small item of revenue. The total expense of each year for the numerous hospitals and almshouses of Paris is more than two millions of dollars. But the whole debt is paid without any sign of the scrambling and screwing and hard work which are so necessary in the conduct of similar enterprises in our own latitude.

In London, I found that printed appeals for aid in behalf of this or that hospital were sometimes posted on signboards at the corners of the streets; and that stationary contribution-boxes for the same purpose are as common there as they are in the old churches of Switzerland. The daily papers also were laden with stereotype and pathetic advertisements, calling for help, and begging their readers not to suffer these charities to languish for the lack of funds. But in Paris there is nothing of the kind. The more than 20,000 sick-beds, and the 4000 persons (exclusive of the nurses) who serve in various capacities, are furnished and paid, whether the national credit goes up or down, and whether the experiment of founding a Republic succeeds or not. And what is more remarkable is, that the whole machinery is out of sight, nobody is asked to give anything, and there is no assault upon the treasury.

This excellent management secures another advantage, not only to the patients in the hospitals, but also to the students who resort to them for the purpose of taking object-lessons in the natural history and treatment of disease; for it enables the authorities to provide and to pay for the best medical and surgical attendance. Guarded by a series of competitive examinations, which extend through several years, which are open to candidates from all over the world, and which are free from the accursed influence of medical politics, this arrangement secures the best talent both for prescribing and for teaching. It places those who



represent, and who are responsible for, the several departments of an hospital, beyond the contingencies that beset the profession elsewhere. Secure in their position, they may cultivate special lines of study, and perfect themselves to a degree which, under different circumstances, is quite impossible. And not being forced to give the mere refuse of their time to teaching, their clinical lessons, especially in the way of differential diagnosis, are very remarkable.

The hospital hours are from eight to ten o'clock, A.M., every day. There are no lectures in the college until eleven o'clock. For some years past the list of students in the college has averaged three thousand matriculants, but they are so scattered, and divided into so many small classes in the hospitals, that one never sees them all together.

The ancient custom of "walking the wards" is still followed in all the hospitals of Paris. This circumstance, while it illustrates the dislike of the French for modern innovations, reminded me of the rhymes with which you may or may not be familiar:

" I'm sick ; I send for Symmachus ; he's here,  
A hundred students following in his rear ;—  
Each takes my pulse and puts his hand upon my brow,—  
I had no fever then, I have it now."

It is a curious fact, however, that the inmates of these wards are so educated or trained to this custom, as not only to have a singular immunity from perturbation or injury on account of these visits to their bedside, but that in many cases they really seem to enjoy them. I saw the babies and children in Bouchut's clinic picked up, turned over, examined, and handled just like so many poodles. They neither whined nor whimpered, nor did they make the least show of fear or of resistance; and the larger subjects, the adults, are like so many lay figures, passive, patient, and always cheerful. On the principle of the Spanish proverb, which holds that "the gardener's foot don't hurt the flowers," I suppose this old way is better adapted to the hospitals of Paris than it would be to those of Chicago, where we have a very different class of patients to deal with.

Some of the ill effects of this peripatetic mode are also compensated by the incessant drill which it affords the student in the

proper manner of examining the sick, and of eliciting their symptoms. This education, which is acquired insensibly, serves to refine the pupils in a remarkable degree, and to familiarize them beforehand with the etiquette of the sick-chamber.

The nursing is all done by the Sisters of Charity, who receive no compensation, and derive no worldly advantage from their position. Their lives are devoted to this especial function, and they perform its duties with a wonderful and beautiful spirit of Christian self-sacrifice. It is of these faithful creatures that a recent writer has said: "The sacrifice of domestic ties and affections seems to direct all the instincts of their womanly nature towards the suffering objects of their care. She who can never have children of her own to return her love, can lavish her affection on the wretched little orphans committed to her; she can be a sister to the wounded soldier in the hospital, to all the sick and the dying. The finer the womanly nature, the more beautifully is her duty fulfilled. It inspires their sweet words of consolation and sympathy; it leads them to relieve, by the most graceful devices, the dreariness of the hospital ward, making it really a home for the wanderer and the forsaken; and it truly justifies the names of 'mother' and 'sister' which suffering humanity has given them."

To the real student of gynæcology the clinical volumes of Bernutz and Goupil are as familiar as those of Simpson, Barnes, or Thomas. Having had great respect for Bernutz, especially since the issue of his work in 1860-62, I went to see and to hear him the next morning after my arrival in Paris. He is one of the staff of the Hôpital de la Charité, and beside a more extended medical service, has charge of the ward St. Joseph, which is devoted exclusively to diseases of women. It is in this ward that the most of his famous and very valuable observations have been made. Beside his daily clinical talks, he gives a lecture every Thursday in the adjoining amphitheatre. One morning each week is set apart for out-patients, of whom there are many; and every Saturday the hour is devoted to examinations with the speculum, etc., to local treatment, when necessary, and to minor operations.

Dr. B.'s manner is kind, genial, very sympathetic, and fatherly; and he enters into the feelings both of his patients and of his

pupils as very few teachers can do. If occasion should require, and his wife's health was in danger, one who had never seen Bernutz, or heard of him, would trust him in a moment with the dearest interests of his home and of his heart.

His style of speaking is slow, colloquial, plain, and direct. It is evident that his thoughts have travelled the same road many times before. With every case, and at every visit, he makes one or more points that "stick." I have seen him take four cases of inflammation of the broad ligament successively, and talk upon the salient symptoms of each for ten minutes, without repetition, and without wasting a word; and when he came around the next day there would be some new disclosure and a fresh discourse on the same subject. More than any other speaker whom I heard, excepting Beclard and Verneuil, he is in the habit of giving full credit to those who differ from him in opinion.

At this my first visit he showed us a large abscess of the left iliac fossa, and gave its differential diagnosis with remarkable clearness; one case of suppurative peritonitis, which was being discharged through the cœcum; another of three years' duration, with outlets through the groin, the vagina, and the rectum; a third, that had to be lanced in the right inguinal region; and all of puerperal origin. Beside these there was one case of metrorrhagia, with anæsthesia of the integument; one of chronic peritonitis, complicated with ichthyosis, covering both legs; one of chronic metritis, complicated with retroversion; one of uterine cancer, and a rare case of uterine polypi. This is a fair sample of the clinical resources of his ward, the professional interests of which, as everybody knows, are in the hands of a master.

He gave us a series of very practical lectures on the various uterine displacements. But in this extra course there was one lecture on inflammation of the broad ligament, which I can never forget. It was based upon the clinical history of several cases which I had watched, and was privileged to examine from time to time, in the ward, and also upon other cases (twenty-five in all) which he has reported in his recent monograph on that subject. At the proper time, I hope to give you the benefit of the instruction which I derived from hearing and following this remarkable man. Suffice it to say that his kindness and his counsel alone

were an ample compensation for the trouble and expense of a journey to Europe.

The Hotel Dieu is the oldest hospital in Paris, if not in the world. It was founded in the year 600, and for many centuries was used as a general hospital. The population of the city increased very greatly without a corresponding increase in the facilities of the institution until, in 1789, the patients became so numerous that as many as from four to nine of them were forced to occupy a single bed! According to the report of a commission appointed to examine into the facts, the sick and the convalescent, the dead and the dying, cases of labor, of malignant fever, of small-pox, and of every kind of surgical accident, were mixed in horrible confusion. The great majority of those who entered the hospital died there. But from the year 1790 other hospitals were established, the sick were sent as the case required to special institutions of a similar kind, and while the comfort of the inmates of the Hotel Dieu was very much increased, the mortality was correspondingly lessened.

The building at present occupied has nine hundred beds, but the new and more modern edifice, built on the pavilion plan and nearly completed, will carry twelve hundred. The entrance to the old part is *vis-a-vis* with Notre Dame, these two structures having faced each other across the street for centuries. The one like the other represents the summit of professional ambition; for the priest who officiates at the altar of the church, and the physician or surgeon whose ministry is in the hospital are respectively as high as they can hope to get in this world, with a fair prospect for the next.

The vestibule of this famous old hospital is adorned with very pleasing oil-portraits of Dupuytren, Dessault, Bichat, Mery, Moreau, and Bodeau.

Guérin, one of the surgeons to the Hotel Dieu, is a very able and interesting man. His face is a benediction; his touch and manner are exceedingly delicate and sympathetic; and his method of catechizing his patients plain and unpretentious. At my first visit I found him in the midst of an amputation. The table was surrounded by about twenty pupils, and he had four assistants, internes, one of whom was a tall, well-formed, and intelligent, but

(if I know them when I see them) genuine coal-black negro. The patient whose arm was being removed at the lower third of the humerus was a brave woman, who played her part without an anæsthetic or the least sign of complaint. A double flap was made, the main arteries were secured by ligature, and the smaller twigs by torsion. Quite an interval elapsed before the dressings were applied, for there was no hurry or bustle, and no dispatch in the performance of the operation. First the wound was bathed in phenicated or carbolized water, and then the lips were secured by the interrupted suture. After this our African brother reappeared on the scene with several rolls of cotton batting. Then the stump and arm were extended and enveloped in layer upon layer of the raw, uncarded cotton. Two or three thicknesses of this material were thrown around the thorax also, and all were enveloped by the snug and careful adjustment of a long roller about the arm, over the stump, and around the chest. This process was repeated until, without the least exaggeration, the abbreviated member was as large as my body. Two more long rollers were then applied so as to cover the other dressing completely, and the operation was done.

The doctor then pressed firmly upon the arm and rapped its free extremity, but the woman said that she neither felt the pressure nor the force of the blow. Directing his remarks to Dr. Talbot and myself, he afterwards said that in similar cases this dressing had been in use in the Hotel Dieu for five years, and that, when it had been carefully applied, unless there were signs of constitutional disturbance, or of local trouble in the member afterwards, it was allowed to remain without being removed for twenty-five, and in rare cases, for forty days. The object in using it was to secure "union by the first intention." He claimed that this end was accomplished through the protection of the wound against mechanical injury, and also in keeping it from exposure to a poisoned atmosphere (for the material elements of infection could not pass through the cotton), and by securing the conditions of dryness and warmth, which are so necessary to the reparative process. Certainly in this case, and in others which we afterwards saw, it did wonderfully well. In the after-treatment of all the ordinary operations in this department the patients were put upon a good

diet, and placed in proper hygienic conditions, but, as a rule, no medicines were given.

Behier, who is the successor of the lamented Trousseau, in the same hospital, is a very able teacher of Clinical Medicine, and a very popular one. The modest simplicity of these men in an age of shoddy and of circumstance, and in a community where all that glitters is thought to be gold, is something very remarkable.

The celebrated Bouchut is a very interesting lecturer on the Diseases of Children. He is attached to the Hôpital des Enfants Malades, and his instruction, especially in a diagnostic view, is something wonderful. On my first "walk" in his wards he took us through the girls' department, which is a separate one, and showed us twenty-five cases, among which I noted four examples of disease incident to puberty. In one of them the integument of the whole of the left side of the body was in a state of anæsthesia, with motor paralysis of the corresponding leg, and with convulsive spasms of the diaphragm; another had intercostal, frontal, and facial neuralgia; the third had anæmia, with subacute enteritis; in the fourth there were signs of incipient phthisis, and in all of them there was *emansio mensium*. Then there were two cases of convalescing rubeola, one of which was complicated with pertussis; one of endocarditis; and two of infantile leucorrhœa. In this and the boys' ward there were about a dozen cases of chorea, a majority of which were entirely disconnected in their clinical history with rheumatism.

But to my mind the most interesting feature of Bouchut's clinic was the diagnosis of meningitis and meningeal irritation by cerebroscopy. This question, which made such a row in the Academy of Medicine a short time ago, and which has made so many enemies for its author in Paris, was illustrated by quite an array of cases which I saw. In one of them there was a diffuse peri-encephalitis, which was secondary upon typhoid fever; and in another the symptomatic lesion was incident to pneumonia. In both he had recognized the complication, made out the diagnosis, and settled not only the prognosis, but the treatment also by this very delicate means. In the post-mortem record of a similar, but a very aggravated case, the opinion previously given to the class had been confirmed by examination with the instrument directly after death, and subsequently by the scalpel.

In a lecture on Catarrhal Croup I was surprised to hear so distinguished an authority say that, if we were sent for in the night to see a case of croup, we should first inquire if the child had nursed, or been well fed, as late as 8 P.M.; whether it had slept soundly for two or more hours after taking the meal; and if it had awakened with a croupy cough and dyspnoea; and that, if such conditions were present, it was not necessary to visit the child, for it could not, by any possibility, be or become a case of true membranous croup. I hope you will be careful to remember that this is Bouchut's advice and not mine, for it is no longer my province to teach in that department, and if it were, I think the counsel should *not* be taken.

Depaul, the responsible editor of the journal of *Tokology and the Diseases of Women*, holds three weekly clinics at the Hospital for Clinics, which is an adjunct of the medical school, and which has been in successful operation since 1836. He is the successor of the famous Dubois, and the author, among other works, of a remarkable monograph on Extra-uterine Fœtation. This clinic is devoted exclusively to Obstetrics and the Puerperal Diseases. A small class follows him through the wards, to the members of which every possible advantage is given; and when the tour is made, the teacher comes into the amphitheatre, where the larger class is in waiting, and gives a clinical *talk* of an hour upon what they have seen. This, indeed, is the general method of conducting the clinics in the Parisian hospitals, and it certainly has its advantages. The annual average of cases of labor in this hospital is about six hundred, a very large proportion of which are preterm, so that the rarest expedients of Obstetric Surgery are brought into almost daily use. This is the Mecca of practitioners and of advanced students in Midwifery. It may interest you to know that the number of births in the various hospitals of Paris in 1874, was six thousand and eighty-four, the deaths among the same being only fifty-four in all.

With the remarkable experience which Depaul has had as a teacher in this charity you will readily understand why the Emperor of Brazil has recently called him to Rio de Janeiro to attend his daughter in her confinement, the fee for which is to be 200,000 francs (or \$40,000), and 50,000 francs (or \$10,000), for his expenses.

I remember, especially, a very valuable and characteristic lecture by Depaul on the Induction of Premature Delivery, in which he took particular care to explain the difference, medical and moral, between it and artificial or criminal abortion. He claimed that the resort to premature delivery owed its origin to Puzos in 1750-54, and not to the English. He thinks it justifiable in certain grave diseases of the heart and the kidneys; in case of very great œdema, and where, in consequence either of the child being preternaturally large, or of some vice in the conformation of the pelvis, two or more children have been lost in previous confinements. Concerning this operation and the results which are likely to follow, there are two sources of difficulty and of danger, (1) we do not know the exact nearness of the patient to term, and (2) the possible variation in the size of the child at a particular period of pregnancy.

These points, and the relative proneness to mal-presentations in cases of the kind, were forcibly illustrated by the statistics that he gave us of forty-six cases in which it had become necessary in this hospital to bring on labor artificially and prematurely. Of these he reported that thirty-five women got well, and twelve children survived. There were among them five presentations of the neck, three of the arms, and one of the breech, all of which (nine) were complicated with prolapse of the cord. Version was resorted to in seven cases, and the forceps having failed eight times, craniotomy was performed in these eight cases only.

Verneuil, the surgeon of the Hôpital la Pitié, has more students at his heels than any other *clinicien* in Paris. He is small of stature (little men always have the advantage), but makes up in breadth of intellect what he lacks in physical height (which is not true of everybody). He is about fifty-five, wide-awake, and very enthusiastic. He is gifted with great common sense, and is thoroughly balanced in the science and art of surgery. His manner is as simple as that of a child, his voice is exceedingly sweet and agreeable, and his hand is one of the few that look as if they had been expressly made to grasp the handle of a delicate instrument. He is the very antithesis of a butcher or a bungler, and one could almost fancy it a positive pleasure to lie under his dexterous scalpel.



He showed us a case in which he had removed two-thirds of the tongue in an adult: one of amputation of the fleshy and cartilaginous parts of the nose; a woman from whom he had removed three and a half inches of the rectum; and a man from whose neck he had taken an enormous tumor which involved all of the integument, and of the adjacent tissues between the ramus of the jaw and the clavicle, and in which operation he had exposed the carotid for the space of an inch, the nerves, muscles, the parotid gland, and the collar-bone. All of the patients were recovering without the least fever or decided inflammation, as proved by the careful record of the thermometer, which he placed in my hands, and as seen through his transparent dressing.

Dr. V. received us very kindly, addressed us as strangers who were welcome, and giving us a place by his side, spoke at length of the after-treatment of surgical cases, for which he is so justly celebrated. In so doing he declared his dislike of "union by the first intention;" exhibited and illustrated his favorite dressing; said that in his department of the hospital none of the dressers were ever allowed to dress or to touch a wound with an instrument; and, what was more remarkable, that, in six years, with all of his cases, he had not had a single death after an amputation. In the light of these facts, and of the labors of such men as Verneuil, the trick of quoting the old-time statistics against French surgery is unkind and unfair.

But the most noted operator in uterine surgery in Paris, and in the world just now, is Péan, of the Hôpital St. Louis. He is bold, dashing, and dexterous to the last degree. He has deliberately extirpated the uterus *ten* times, and saved *seven* of his patients. I say he did it deliberately, because, as you may know, it has been done by accident, and no little reputation afterwards made out of the blunder. His ovariectomies have been numerous and very successful. Indeed, he was among the first to demonstrate that the removal of an ovarian cyst could be successfully performed in Paris, and, since the publication of his pamphlet on that debatable subject some years ago, he has been rapidly gaining repute as an ovariectomist. He has a peculiar gift for the invention and adaptation of instruments to suit some special purpose or indication. These tools are fashioned for use and not for fame.

They are not predestined, therefore, to the shelves of the toy-shops. In due time I shall take pleasure in showing them to you, and in teaching you how to use them.

Péan illustrates a union of the sanguine and the sanguinary temperaments. He is still in middle life, but is already rich in what has been styled "the dateless income of experience." He pays the tax of censure for being eminent; and he can well afford to do so, for his operative audacity is balanced by the better qualities of mind, and does not by any means constitute his chief or only capital. It is worth a great deal more than a visit to the Louvre, or to any other gallery, to witness his performance of ablation of the uterus especially.

Being limited in this address to the old hospitals, and those who teach in them, I will be excused from speaking of the members of the Faculty at the Medical School of Paris. Indeed, my letters to some of the medical journals have already furnished this material. But I cannot forbear a word in reference to Claude Bernard, who is acknowledged to be the greatest living physiologist. He will always be known as the discoverer of the glyco-genic function of the liver; but his claims in this direction include the first notice of the mydriatic action of the sympathetic, the function of the chorda tympani nerve in its relation to the secretion of the submaxillary gland, and the peculiar antagonistic action of the motor oculi nerve.

Bernard delivers his lectures in the Museum of Natural History and in the College de France. I heard him repeatedly. His audience numbers about eighty, and is composed chiefly of *savants* and the more cultivated representatives from the various professions, with a sprinkling of women and medical students. He is about sixty, and resembles Agassiz, but is not so pleasant a speaker. He sits and talks in a familiar way, and what he says is of the semi-scientific character, which is adapted to so mixed a company. Except as a *worker*, he is not an enthusiast. It is said that, for thirty years, his dissections, including both ante- and post-mortem, have averaged as many as four or five daily.

My first visit to the lecture-room of this remarkable man will always be associated with a pleasant episode that served to link the past with the present. Dr. Talbot and myself were at the

Hôpital la Pitié that morning, and, Verneuil having finished his round, were about to leave, when one of the gentlemen present inquired if we were not Americans. We said yes, and he then told us that he was also. In brief, as we walked together to hear Bernard, it transpired that he and I were students at the same time, and often in each other's company, twenty-six years ago, when we walked the wards of the oldest hospital in the United States. I reminded him of the title of his thesis, and we recalled many pleasant memories of our student-life. The sensation on meeting an old friend, so far from home, after so long a separation, and so unexpectedly, was quite peculiar. Perhaps you also may enjoy something of this kind by and by.

I might tell you of the Hôpital du Midi, where the venereal patients were formerly treated to a flogging both before and after they were cured; of the Salpêtrière, with its four thousand three hundred and sixty-nine beds, of which three hundred and forty-eight are for old and indigent women; of the Bicêtre also, which has two thousand two hundred and seventy-five beds; and of the Maternité, where there is such a wealth of puerperal diseases of almost every description, and where Hervieux gathered the data for his great work, but there is no time now. It only remains to give you my impressions and conclusions on the general subject.

Savarin declared that a dinner without cheese was like a beautiful woman with only one eye. Nothing can be more incomplete and unjust than the idea, which is entertained by many, that the French are a frivolous people, wholly given to the pursuit of pleasure. One day's experience in either of the hospitals, or in the medical school of Paris, will prove the contrary. For, if there is a class of men who are seriously occupied with the duties of their mission, those of whom I have spoken are its representatives. I did not hear any "talking against time;" there was no "padding," and no vulgar anecdote in any lecture; no crude and sloppy speeches, and no sermon-reading; but every teacher was bubbling over with, and not babbling over, his topic. Each one evidently came forth full of his subject, began to talk, and then, as Goethe puts it, "warmed himself by his own fire."

The distinguishing feature of the French school of medicine is excellence in diagnosis. Somebody has said that their politicians

have tried to make a republic before there were any republicans in France. But nobody can charge the medical faculty with perpetrating the more common error of making a doctor before it has made a diagnostician. They begin at the right end of the series: first, the reading and the didactic training, and afterwards the clinical drill. The course is elective, but the instruction in every department is thorough. The tempting fields of speculation and conjecture do not attract these earnest men, who, it seemed to me, sometimes take more genuine pleasure and have a greater pride in making a correct diagnosis than in curing the disease.

Indeed, among them, there is everywhere shown a marked and decided skepticism in regard to the curative effect of remedies. Internal medication is almost entirely of the expectant order. Soothing anodynes, teas, confections, and little placebos of various kinds, are the common resort, but the special therapeutics of the case is almost never dwelt upon or emphasized. Nor could it well be otherwise when you consider the rule, to which there are few exceptions, that the less a doctor knows of the wonderful organization and susceptibilities of the human body the more medicine he gives. The truth is that these celebrated teachers are too conversant with the intricate mysteries of special pathology to venture in the direction of overdosing.

Three months of daily attendance upon the hospitals of Paris, added to many years of experience as a teacher and practitioner in this city, have settled my convictions concerning the propriety of our American students going abroad directly after having "finished their studies" at home. I think it is a mistake. After graduation, five, ten, or twenty years of professional experience, would not only teach them how and what they could learn to the best advantage, but it would also afford the proper test of their especial adaptation to this or that branch of medicine or surgery. Such an intermediate discipline would fit them to appreciate and to assimilate what they saw and heard in a more advanced clinical course. It would not be useless to go directly into these old hospitals, but it would be more beneficial to visit them, and to study in them after having had a certain amount of experience. And there is no doubt that, under proper conditions, it would be equally useful for foreign students to come and pass a few months in the hospitals of America.

## General Record of Medical Science.

*Pneumonia*, by Prof. Aufrecht.—Most authorities describe red hepatization as an exudation where the alveoli are filled with indifferent cells of granulation or suppuration, and which Cohnheim showed us to consist of extravasated white blood-corpuscles. Aufrecht found in his macroscopic as well as in his microscopic examinations, that the alveoli are filled with red blood-corpuscles, imbedded in a dense but very irregular net of fibrinous threads, just as we find in any other blood-coagulum. Both together form a dense mass in the alveolar cavity, so that between it and the alveolar wall remains a small empty space, through which solitary fibrinous threads are drawn, connecting the wall of the alveolus with its contents. He also found the epithelial cells coming from the alveolar wall. The capillary vessels of the alveolar wall are so filled with red blood-corpuscles that the best artificial injection could not bring them out more fully.

In all cases of red hepatization he found the finest ends of the bronchioles filled with white blood-corpuscles, as if they had to exclude the air from the lumen of the alveoli. He also found white blood-corpuscles inside of the alveolar space between the alveolar wall and the contents of the alveolus. Gradually the red blood-corpuscles disappear; only here and there small particles are still found, which, as it were, escaped the process of degeneration. The fibrinous net now holds the white blood-corpuscles, and instead of red, we find now gray hepatization. The fibrin only disappears with the termination of the gray hepatization.

The transition of a red into the gray hepatization does not take place at once in the affected lobe, and we find thus manifold stages of transition. It frequently happens, that in a lower lobe, whose upper half clearly shows red hepatization, the lower half has advanced to gray hepatization, and it would be hard to decide when one stage ceases and the other commences, inasmuch as they rather pass one into another.

Aufrecht prefers to call the first stage of pneumonia that of parenchymatous inflammation, which means a diseased condition of the alveolar epithelia, with consequent hyperæmia and serous transudation. The second stage is that of intermediary hæmorrhage, and the third stage that of exudative inflammation, whose beginning is uncertain. It follows most probably the acme of the parenchymatous inflammation, as very little time is needed for the production of the hæmorrhage, and for the filling up of the alveoli. It is impossible to set a time when, in consequence of the exudative inflammation with the immigration of the white blood-corpuscles, the red ones disappear from the alveoli, inasmuch as the hæmorrhage consequent to the parenchymatous inflammation does not take place simultaneously in all parts, and because even after the appearance of an exudative inflammation, hæmorrhage and exitus of red blood-corpuscles through the altered walls of the blood-vessels may take place.

1. The first stage of pneumonia, l'engouement des poudrons, is characterized by an overfilling of the bloodvessels of the lungs, especially of the capillaries of the alveolus, with blood, and by a simultaneous or consequent discharge of

an albuminous viscous fluid into the lumen of the alveoli. But microscopically we also meet an exuberant filling of the capillaries with red blood-corpuscles, the alveoli full with cast-off epithelia in a state of fatty degeneration, and changed to granular cells, and with newly formed cells. Heitler and Foerster agree that the epithelium in the beginning of a pneumonia is set free, and that the process opens with a desquamation of the epithelia. The epithelia of the lungs must be considered as similar to those found in the parenchymatous cells of the glands of the liver or kidneys, and we have thus in the lungs the same process, which we recognize as parenchymatous nephritis in the kidneys, or as parenchymatous hepatitis in the liver. In all these organs the process emanates from the parenchyma, but its course differs according to the organ affected. On account of the superficial position of the capillaries in the alveoles an alteration in the walls of the bloodvessels takes place as soon as the epithelia are diseased, either in consequence of the inflammation, or because the epithelia do not form any more a sufficiently firm covering, leading to hyperæmia, to extravasation of blood, and with it to exudation.

Parenchymatous nephritis offers a decided analogy to this process. It is well known that the epithelia of the urinary canals show the most essential changes, and during life we can demonstrate in the urine the same cells of granulation and suppuration, as we find them in the alveoli in the stage of gray hepatization. That they come from the kidneys is shown, as they are often imbedded in fibrinous cylinders or are discharged with the cylinders, and they are so numerous as to form a perfect equivalent to those appearing in pneumonia and filling up a whole lobe. Let us also consider how often we find hæmaturia in parenchymatous nephritis, for here nobody doubts that the blood comes from torn bloodvessels, and we feel convinced, that in both diseases we deal with the same process, *i. e.*, with a morbid condition of the epithelia, with a hæmorrhage, and with an exudation from granulation-cells.

2. Considering then the second stage of pneumonia, the so-called red hepatization, as an effect of hæmorrhage, let us examine the different sputa, which may be pure blood, and they may only contain traces of it; blood may even be entirely absent and the pneumonia still take its normal course, when the stage of exudation immediately follows that of the parenchymatous inflammation without the intermediate hæmorrhage. Hence the essential modifications in the course of the disease. Whereas, in the former case, usually on the second day of the disease, the part attacked by hæmorrhage is perfectly void of air, the dulness intense, the breathing loud bronchial; we find in the latter case the condensation gradually appearing, and the manifestations of percussion and auscultation less clearly pronounced. The quantity of the hæmorrhage therefore fails to give a hint for the quality of the inflammation, and the danger is not always in direct proportion to the quantity of the blood. True, in pneumonia the very contrary is a fact. The danger *cæteris paribus* is the greater, the smaller the quantity of the blood is in the expectoration. In strong persons of middle age we often meet the most exquisite pneumonic sputa; in debilitated patients, in senility, in pneumonia of the upper lobes, in primarily or secondarily asthenic pneumoniæ, they are too often absent. Red

hepatization must be imperfect where the propelling power of the heart is diminished, and thus the whole course of the disease becomes more unfavorable.

This is especially the case in that form, which Buhl calls "desquamative pneumonia." Here nearly always we miss the hæmorrhage; the stage of parenchymatous inflammation extends for a long time, and only slowly the stage of exudative inflammation follows. But there is nothing specific about it, and it may appear as a primary disease, although we meet it more frequently after bronchopneumonic processes in the apices and after hæmoptoe emanating from bronchopneumonic foci.—*Zeitschr. f. pract. Med.*, 44, 1875.

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### Reviews and Bibliographical Notices.

*Encyclopedia of Pure Materia Medica*, by T. F. Allen, etc., Vol. II. *Boericke & Tafel*.—With a celerity unexampled in the publication of works on Homœopathic Materia Medica, Vol. II of this great work has followed Vol. I; and before these lines meet the eye of the reader Vol. III will probably have found its way to his—shelves, must we say? Nay, we hope to the study-table, whereon are kept the books which he daily consults! For not to recall the remedies included in Vol. I, and which are not to be found in full elsewhere in our English literature: such as *Atropin*, of which Hirschel and Kafka have taught us the value in gastralgia; *Arsenicum iodatum*, most useful in some scrofulous affections; *Aranea diadema*, in intermittents; *Apomorphia*, in obstinate vomiting, e. g., of pregnancy; *Ailanthus*, in malignant scarlatina and scarlatinal diphtheria; and the varieties of *Agaricus*; we have in Vol. II Molin's additional proving of *Aurum*, which gives us important symptoms relating to the eye, ear, nose, and throat; the complete proving of *Berberis*, without which one could hardly be prepared to encounter cases of renal colic or of hepatic disease; *Badiaga*, indispensable in certain bronchial catarrhs; the entire proving of *Bromine*, which shows the fitness of that drug, not only for croup, but also for heart disease, and for intermittents and dysmenorrhœa; the proving of *Bufo*, the value of which in epileptiform disorders is attested by our clinical records; a fuller report than has elsewhere appeared of the action of Camphor, a remedy whose sphere of usefulness is by no means confined to cases of cholera, as the law of similars will show to the student of this pathogenesis; and finally, the symptomatology of *Carbolic acid*, respecting which so warm a discussion is now waging. While we cannot believe it to be, as is claimed by some, a universal specific in diphtheria, as we do not believe in general specifics for any class of cases bearing one nosological name, the testimony is too strong to admit of a question that it has proved the remedy in many cases of diphtheria, and these of the severest character. Those who rely on it as a "specific for diphtheria" neglect the fundamental requirement of sound homœopathic practice, which requires strict individualization of cases, and condemns prescriptions according to the name of the disease. But those who, in seeking a remedy for a given case of this disease, neglect to study the proving of Carbolic acid are in danger of overlooking a drug which has cured many severe cases, and may be the

remedy for the case before them. Besides this our own observation, in a case in which this drug was given from the analogy of the general, and especially of the cutaneous symptoms, shows it to possess, in this case at least, a wonderful controlling power over the destructive processes of vaginal epithelioma. So much for the more rarely used and newer remedies, for full discussions of which we should vainly look elsewhere. But even our old friends, like Bryonia, appear in a new dress; and with such amplitude and richness that we hardly recognize them; and yet so well arranged that the study is easier than in the old textbooks, although the material is so much greater. Many an old student, perusing this article on Bryonia, will see, for the first time, how it is that certain applications of the drug which he has learned *ex usu in morbo*, or from tradition, are justified by our law of cure, and he will learn many new applications of which he has hitherto had no idea.

In view of these additions to our knowledge of old remedies, and these introductions to us of remedies heretofore unknown, we must express our astonishment at the words of a contemporary who intimates that this *Cyclopaedia* may find a place on his shelves, but will be rarely consulted by the "AVERAGE PRACTITIONER," who is too busy to turn over the pages of so large a work!

The great size of a work involves no difficulty in using it, provided the arrangement of the matter be such as to facilitate reference. And in this *Cyclopaedia* the arrangement seems to us perfect; and it is as easy to find any rubric in it as in Jahr's smallest handbook. We find it as easy to look up the words "*average practitioner*" in ponderous Webster's "unabridged" as in a schoolboy's "definer." And the larger work has the advantage of giving all that is known on the subject, while the small one generally omits something that is essential.

But *who* is this "average practitioner" who is so busy with practice, and so faint under its burdens, that he will not care or have strength to turn the leaves of an imperial octavo in search of the remedy needed by his patient, but must content himself with a calf-bound duodecimo, and let his patient shift as he may? In a large acquaintance with the profession in many States and countries, and for many years, we have failed to meet this animal.

The "average practitioner" whom *we* know is the physician of "average" opportunities, whose resources and erudition have not been ample enough to give him access to the *Materia Medica*, as it is scattered through the journals of three or four nations; with painful and conscientious labor he makes the most of the incomplete and inaccurate handbooks which are, up to this time, all he has to depend upon. He eagerly catches at every item of knowledge he can find in the journals which he reads, or procure from his more fortunate colleagues, and thus supplements his handbook. And if, now and then, he hears or sees a fragment translated, without condensation or mutilation, from the original *Materia Medica*, he wonders at the clearness of indications which have always seemed to him obscure, and complains, with good reason, that the whole *Materia Medica* has not hitherto been made thus clear and accessible to the English student.

This man will hail the successive volumes of the *Cyclopaedia* with delight when he becomes familiar with its merits; and will make as frequent and conscious use of it as he has been wont to do of his JAHR or his HALE.



In Vol. II we notice many improvements upon Vol. I. The editor and his workmen are evidently getting used to this machinery. The references which introduce each pathogenesis are full and explicit. And the dose with which each proving was made is mentioned, and generally the period of the proving at which the symptom occurred is stated. This makes it practicable for the student who is investigating these points, to almost reconstruct the daybooks of the provers, and to discriminate the effects of different doses. Greater care has been taken, and with gratifying success, to insure correctness in the references. Indeed in this respect the accuracy of the editor has surpassed the acuteness of an accomplished critic. Dr. Hughes, in the third edition of his *Pharmacodynamics*, says he could not find Molin's proving of *Aurum*, "Allen's reference to it being *incorrect*." This is a mistake. Allen's reference is *correct*, and we venture to surmise that Dr. Hughes has confounded the *Bulletin de la Soc. Med. Hom. de Paris*, Vol. I (1845), in which, as Allen says, the proving is found, with the *Bull. de la Soc. Med. Hom. de France*, Vol. I (1860), in which, of course, it is *not* found; a mistake very easy to make. And in like manner we must ourselves plead guilty to a sort of error in criticism. In our notice of the translation from the French of Mure, in Vol. I, we said, in substance, that the translator had evidently followed Hempel, but had deviated from him, and made mistakes, where Hempel was correct. It appears, however, that Hempel gives two renderings, differently arranged, of each drug; one tolerably correct, the other quite incorrect. The translator unfortunately, in the two instances cited, followed the incorrect version. Being now on his guard against untrustworthy guides he has gone to the original sources, and we have no fault to find with the translations in Vol. II, save that in *Blatta Americana*, Symptom 20, "*right*" should be "*left*;" and that Symptom 3 of the original "*Fourmillement dans des doigts des pieds, 7 A.M.*," seems to have been omitted.

To test the accuracy and completeness of the work on Vol. II, as we did with Vol. I, we have compared *Bryonia* with the original sources. Unfortunately by accident a portion of our notes have been mislaid. The following are the chief criticisms noted on the translation of the Austrian provings of Arneth, Gerbatta, and William Huber.

Symptom 178, instead of "first day," read "sixteenth day."

Symptom 815, instead of "the heat was diminished," read "the hearing was impaired;" and, in the same symptom, instead of "cracking in the ear on sneezing," read cracking, etc., on *blowing the nose*; and in the last line of page 257, instead of the words "very much" we suggest the words "somewhat more."

Page 258, sixth line from the top, for the word "sudden," substitute the words "towards evening;" and in the fourteenth line from the top, for the word "sneezing" substitute the words "*blowing the nose*."

Symptom 394, for the words "(after half an hour), (from 7th dil.)," read "(a half hour after taking 7th dil., on the *twelfth day of the proving*.)"

Symptom 545, for "the stitches became very irregular," read "the stools became," etc.

Symptom 768, to the phrase "(after half an hour)" add "on the *twenty-eighth day of the proving*," during which he took the medicine daily.

Symptoms 1244 and 1245, by the same prover, appear contradictory, but this impression would be removed if it were stated that 1244 appeared on the "sixth day," and 1245 on the "nineteenth day" of the proving, the prover taking, each day, large doses of the tincture.

Symptom 1295, for "left lumbar region," read "left supra-iliac region," a correction which, like most of those noted by us, the context would lead the observant reader to make.

Page 282, second line from top, the words "slight diarrhœa," etc., should not be connected with the preceding words by a semicolon. The diarrhœa occurred distinctly, twenty-four to thirty-six hours later.

Page 285, tenth line from bottom, transpose the comma before "similarly," and the semicolon after "violently." The clause included between these marks relates to what follows the semicolon.

Page 294, last word, for "first" read "eighteenth."

Page 296, second line from bottom, for "he wrapped himself closely in bed," read "he jerked up in the bed," i.e., with the convulsive shudder of the sudden chill.

Page 297, third line from top, for "first night" read "twenty-second night," and in the next line, for "(after tenth night)" read "(after ten minutes)."

Same page, last line, for "(first night)," read "(twenty-second night)" of the proving.

The reader will notice that most of these faults are inadvertencies of writer, printer, or proofreader. They could not mislead the student, but, nevertheless, they are blemishes. They show that the editorial armamentarium needs still a last supervising critic. We venture to say, that provision has been made for such revision as will prevent similar faults in future volumes, and will place the *Cyclopædia* before the profession, as perfect a presentation of *Materia Medica* as existing materials will enable the editor to produce. And the profession will not fail to remember, that the editor undertakes to give only such provings as have been published. He by no means guarantees their accuracy nor essays to make them perfect. C. D.

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## Miscellaneous Items.

### EDITORIAL.

*Wells on Scarlatina, a Monograph.*—More than ten years have passed since the great physician published in the late *American Homœopathic Review* a series of papers on this terrible plague of infancy, but sickness overtook the worthy Doctor, he had to fly to a sunnier climate, the papers were never finished, and thus a void left unfilled in our medical literature.

Thanks to Dr. Carroll Dunham and other friends for their kind words, by which finally P. P. Wells could be persuaded not only to finish, but to re-write his observations on scarlatina up to date, and thus our readers see before them *the best paper ever written on scarlatina*. It is our pleasant duty to give the whole monograph in one number, so that it may be read without interruption, and thus better digested.

P. P. Wells promises our readers some more leaves from the storehouse of his vast experience. Goullon, Jr., sends us greetings, and promises us notes from the diary of his revered father.

Oh! ye old men, who have toiled for years at the bedside and in your library, awake to your duties while the lamp of your life is still burning. You owe a sacred debt to your friends, and let them partake of the treasures which you have garnered in. Sow them broadcast over the land in any journal you please, but do not withhold them nor put the work off till it is too late. You may be sure that the world will not stand still, whether you do your duty or neglect it, and younger brethren will work on, and accomplish the aim and problem of their life, to make homœotherapeutics acknowledged as the basis of rational treatment.

Though we may differ on minor topics, let that not suffice in splitting our school into different camps. We need all laborers for the accomplishment of our work, and only by our united efforts can we succeed. May this Centennial year be the harbinger of good fellowship between each and all of us, and may, for humanity's sake, we live up to that trite but true saying, "with malice towards none, with charity to all."

*Our Centennial Year, 1776, 1876.*—In *Harper's Monthly* a series of papers appear under the title "The First Century of the Republic," a kind of balance-sheet to find out our credit and debit in every branch. A series of similar papers, a similar balance-sheet on medical art and science, we expect to find on the table of our Centennial meeting. To make this report as full as possible we consider the duty of every physician, be he young or old in practice. Let there be a collection of "leaves from a physician's diary," and the very thing which we miss so much in Allen's *Cyclopedia* will be the crowning-point of our Centennial meeting, *the verification of every important symptom in our Materia Medica.*

Father Hering has set us a glorious example in the first volume of his *Analytical Therapeutics*, and every physician ought to follow such a leader. What a multitude of facts could be collected if every man or woman would perform the slight task. How many questions would be thus settled, and how easily we would then find out what remedies act better in the lower potencies, and which in the higher and highest. Individuality of the remedy would be thus as well acknowledged, as we acknowledged long ago the individuality of the patient. The pathological state of a remedy would thus become clearer to our juniors, who are already well versed in the pathological lore of the old school.

A mansion is built up of bricks, and we are sure that every one could furnish at least one brick to our Centennial mansion. Do not say you never were invited, or that the Centennial Bureau neglected you by not assigning some work to you. Rouse yourself up above such trifles, and by a united effort let us show to the world that in this land of freedom homœopathy has not only found a home, but that it is our aim to raise it up to the rank of a science, and that medical practice will forever remain in that continual transition state till homœotherapeutics are acknowledged by all practitioners as the crowning arch of medical art and science.

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**Original and Translated Papers.**

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**ARTICLE XXVII.—A Lecture on the Luetic Diseases  
of the Brain and Spinal Cord.**

BY PROFESSOR WUNDERLICH.

GENTLEMEN: For several years we have a young woman in our hospital, who offers peculiar manifestations. After having been paralyzed for the last four years, she only begins now to walk again. She looks plump and well-nourished, and does not look like a sick girl; she moves her arms without any difficulty, but her features, though intelligent, look relaxed. The lower extremities are weak and atrophied, still she can move them about in any direction. Her answers are clear, but her syntax is that of a little child, as she uses her verbs in the infinitive mood. Speech is slow and interrupted. She can count, but instead of three she says two and one, omits thirteen and twenty-three, and all numbers between 30 and 39, or says 20 and 10. A short time ago she also omitted 7 and 70, nor would she write these numbers, although she wrote the others promptly. In speaking, she cannot get the name of some well-known subject. Instead of spoon she says, "thing to eat;" instead of coffee, "black and white in a cup."

She became infected when 17 years old. Five years ago she

complained of headache and vertigo ; a few weeks afterwards she had a severe attack of syncope, and for fourteen days severe spasms, with unconsciousness, lasting for hours ; whereas, between the convulsions the sensorium remained dull. For several weeks she had from three to five convulsions a day. Amblyopia set in and speedily progressed. Much palpitation, oppression of the chest, and total loss of appetite. January, 1870, she entered the hospital. Nutrition and color of face normal, tonsils slightly swollen, some moderately swollen painless glands on the neck and elbow ; no motor paralysis. For some time she still had irregularly her convulsions, either with intercurrent delirium, or with deep coma lasting several hours, with severe changing pains ; moderately frequent palpitation, and without rise of temperature. Methodical mercurial inunction relieved the spasms, consciousness became more clear, and the headache lessened, but paresis of the right facialis and anæsthesia of the trigeminus set in, the strength in all extremities decreased, the cutis without sensation. February 21st. Maculæ appeared on the forehead, gradually covering themselves with thin scales, and slowly extending to the chest and shoulders. As the convulsions ceased she fell into a perfect apathy. After the mercurial treatment, Iodide of potash, with baths and laxatives were continued, with slow but steady improvement.

A second patient is only with us for the last few weeks. He admits of having had a chancre several years ago, and an exanthema two years ago. Lately, he complained of his chest, expectorated blood several times, and then found difficulty in walking, so that he could only walk small distances without a cane. He looks well, has no fever, and consciousness unclouded. Some small indolent swellings of the lymphatic glands around the neck. Hoarseness, redness, and swelling of the larynx from the epiglottis to the vocal cords, but no ulceration. The motions of the head, of the upper extremities and trunk, easy ; those of the extremities inhibited especially in co-ordination, but his walk decidedly differs from that of a tabetic patient. Sensibility everywhere normal. Both pupils wide and immovable. On the fourth day of his sojourn in the hospital he felt suddenly unwell, and complains that he could not see anything. Ophthalmoscopic examination reveals neither retinitis nor an extravasation. The urine perfectly

normal, but temperature somewhat increased; the pulse accelerated, and some mental dulness. Mercurial inunction was ordered.

On the following morning perfect coma, during which the patient gives out only some inarticulate sounds, followed on the next day by general excessive hyperæsthesia of the skin, with total unconsciousness, so that the patient moans at the slightest touch, and tries to ward it off. Leeches behind the ear, and the ice-bladder. Temperature nearly normal, pulse quiet. In the afternoon the reflex movements decrease; the patient rises up, when spoken to, but is unable to reply, and cannot see. Next morning, about five, he suddenly exclaims: "I see again," and then relapses into his dull state. In the afternoon he begins to speak, but shows partial aphasia, and recognizes the hand held before him. On the ninth day of his sojourn, hallucinations and deliria, moderating the following days, but becoming furibund on the twelfth. He is quieted by Morphia, and on account of the affection of the gums he is put on Iodide of potash. Improvement now set in, at first in his psychical relations; after five days, reading and writing is possible; and fourteen days after the last maniacal fit he is able to walk alone, and his sight is clear. He still continues the Iodide of potash.

In our third patient you recognize the choreic motions in the face and upper extremities, but also on the trunk and lower extremities, the muscles act restlessly. His muscles are quiet as long as nobody looks at him; but as soon as he is accosted, or when he wishes to speak, oscillatory motions begin, steadily increasing in strength, perfectly disabling him from the performance of any co-ordinate action. But this present state is only the shadow of that which we observed for months in him. The patient, 28 years old, was brought to the hospital in a fit of severe mania. It began a few days before with twitching in the upper extremity. When admitted he kicked, screamed, and could hardly be kept down. After the maniacal paroxysm was over he remained quietly in bed. Once he got up at night and went up to the roof, as he imagined there was fire in the house. Brought back into his bed he slept, but had another maniacal fit the next morning. As he had a chancre about four years ago, and as the axillary and inguinal glands were swollen, hard, and indolent, treatment was ordered

by hypodermic injections of Mer. cor. and Iodine pencilling on the head. Three weeks after the beginning of the disease (after the seventh injection) a dispersed pustular exanthem appeared on the occiput and extremities, forming thick crusts. The maniacal fits returned nearly every day, with choreic movements during the intervals. He had a great deal of delirium, and off and on amnesic aphasia, so that he could not find the words which he wished to express. In walking he looked much like a drunken fellow. Gradually his sensorium improved, but at the same time his chorea increased. As soon as his gums became affected, the Iodide of potash treatment was begun, and under it gradual amelioration followed, although his speech is still slow and measured, as if he had to think for the word, and his choreic restlessness has greatly moderated.

These three cases, though differing so much in their symptoms, are essentially alike; they are cases of luetic cerebral affections.

There is hardly any disturbance of an internal organ where a correct diagnosis is more necessary for sound treatment than the nervous manifestations caused by lues, and though they are frequent enough, many a case is wrongly diagnosed and falsely treated. In the works on syphilis, luetic cerebral affections are hardly mentioned, perhaps because such cases are hardly ever treated by physicians who make syphilis their specialty; but far more frequently by physicians whose specialties are the eye and ear, female diseases, or mental affections. Just as little is found upon it in works on general practice, if we except the clinical lectures of Jaksch (*Wien. med. Wochschft.*, 1864), or the annotations by Griesinger (*Archiv der Heilkunde*, 1860). Recently, Prof. Heubner has published a monograph (*The Luetic Diseases of the Cerebral Arteries*, 1874), wherein he clearly depicts the anatomical seat of many syphilitic cerebral diseases, and proves the value of the changes in the cerebral bloodvessels, which many a time cause severe manifestations, though the brain is apparently not affected.

In the bodies of persons dying from cerebral or spinal lues alterations may be found in different places. Bones, membranes, nervous substance, may become affected at any spot; sometimes there are multiple changes. Partly residua of processes, as also found in non-syphilitic hæmorrhages, inflammations, disturb-

ances of nutrition ; partly forms peculiar to syphilis, as gummata. In many fatal cases the manifestations during life fail to give the least hint of the affected spot, and in others the anatomical change happens at an insignificant spot, having no influence on the symptoms, and, per contra, cases full of symptoms during life fail to give coarse anomalies in the cadaver.

If we consider that rapid amelioration, or a cure of very severe cases, stands in contradiction to the presence of considerable anatomical changes, we must acknowledge that the pathological anatomy of cerebral lues, as formerly known, was of little value in judging cases.

Heubner's monograph threw light into former darkness. The changes in the thickness of the arterial walls, in the calibre of the canals and their permeability, which are so easily overlooked in autopsies, render it clear that sometimes the result was negative after severe symptoms. The disturbances of circulation caused by such changes, certainly cause often the symptoms ; whereas the coarse anatomical change, according to its seat, may be of subordinate or of no influence on the symptoms. The vascular alterations, producing circulatory disturbances on every point of the brain, clearly explain the many forms, the extension and the variability of the symptoms. They show that suddenly severe symptoms may set in, and that the worst symptoms may rapidly get better as soon as this inhibitory process in the circulation is taken off ; or the circulation may adapt itself to the changed calibre of the bloodvessels ; but as we cannot expect a perfect restitution of integrity of the walls, we now understand why, after apparent restitution of the functions, still more or less irregularity may prevail.

It is of the utmost importance, in considering a cerebral disorder as a syphilitic one, that a former infection, or the presence of past or present lues, can be proved. Where the patient acknowledges syphilis, or where we meet indolent buboes, luetic eruptions, or remnants of them, affections of the buccal cavity and fauces, or cicatrices, or osseous tumors, periostitis, iritic disturbances, ozena, etc., or where hard scars are found on the sexual organs, and we have to treat a suspicious alteration of the cerebral functions, it is our duty to keep the luetic infection before our



eyes. Even less reliable, but still suspicious hints, must not be lightly considered, as small glandular swellings on the neck, elbow, or in other places; a striking defluvium capillorum, and a dry lustreless condition of the hair; a strong foul breath, without a disease of the teeth, of the stomach and lungs, and this foul odor in spite of great cleanliness, the existence of a dissecting glossitis, etc. Even the presence of a remittent fever, as it is sometimes witnessed in acute exacerbations of syphilis, may aid us in the diagnosis of the cerebral manifestations, especially when the stupor lasts longer than the fever. Cerebral lues sometimes also appears, when every symptom of syphilis has vanished a long time ago, or where there only remain such dubious or minimal manifestations of the specific disease, as to be of little value for the diagnosis. On the other side, a syphilitic patient may be also attacked with a cerebral affection, having no connection whatever with the constitutional disease; and when a person infected with syphilis suffers from cerebral affections, *e. g.*, an apoplectic fit, an epileptic or maniacal paroxysm, or its sequelæ, it still remains doubtful, and of the greatest importance in relation to therapeutics, whether the cerebral symptoms are part and parcel of the lues or not, especially—and this happens not rarely—when with the syphilis one or more causes can be shown, sufficiently explaining the grave cerebral disturbance, as heredity, potation, a dissolute and debauching mode of life, overexertion of the mind and psychical effects, traumatic and toxic influences, cold and sun-heat, diseases of other organs, easily provoking brain-disturbance (heat, arteries, rectum, liver, genitals). It may happen that the development of the brain-disease rests on one or another cause, and still the syphilis may show its influence upon it, and solitary morbid cerebral manifestations may have existed before the infection, and still the syphilis may imprint its stamp upon them. Thus a patient had fits of syncope from his youth, and other nervous symptoms. The course of cerebral lues also began in him with fainting spells, which became gradually deeper, and continued longer, till finally other symptoms of cerebral lues were added to it.

Lues may also cause changes in the brain, which remain latent, till an accidental noxa, attacking the brain, becomes active, and

then we meet the luetic cerebral affection in all its characteristic forms. Thus a patient of mine had been syphilitic fifteen years before ; three weeks after a fall on his head, which rendered him unconscious for a day, the first symptoms of cerebral syphilis appeared ; topical spasms in the left arm, followed by the usual phenomena of this disease. Mercurial inunction cured. We must try, therefore, to make our diagnosis from the form of the nervous disorder, and thus we may gain a probability of the syphilitic nature of the disturbances which may justify the induction of the specific treatment. There is no such thing in the nervous system as a particular symptom decisive for its syphilitic nature. All functional anomalies, depending on a disturbed brain or spinal cord, may also be found in cerebral lues, and every solitary symptom found in syphilis of the brain, may also be discovered without a trace of syphilitic disease.

Lues causes disturbances of sensibility of every kind and of every degree, from the slightest abnormal sensations to the most furious pains, from hardly any loss of sensibility to the most perfect anæsthesia in every organ of sense ; disturbances of mobility also in every form and in every degree, every kind of involuntary motion to epileptiform spasm and the most severe tetanic stiffness ; weakness everywhere and in every degree, from the slightest decrease of muscular power and muscular co-ordination to the most perfect paralysis in every branch of the motory nerves of the brain and spinal cord ; sleeplessness and sleepiness in every degree, even to deep coma ; disturbances of the psychical functions, either in the form of abnormal irritability to the most senseless mania, or in the different degrees and forms of mental dulness even to idiocy and perfect abuly.

Still there are symptoms which may rouse our suspicion. Thus, when certain especially grave nervous manifestations appear in persons, where we fail to find any cause for them ; though great caution is here necessary. In strong persons of middle age, especially of the male gender, with well-formed brain and nervous system, without any hereditary disposition, free from bad habits, without any preceding disturbance of health, without external or internal noxious influences, grave nervous manifestations are a rare occurrence, at any rate they never happen suddenly and imme-

diately. The vascular and nervous system, so sensitive in a hereditary disposition, and to toxic, infectious, and coarsely mechanical attacks, shows in well-constituted persons a strong power of resistance and very little disposition of morbidity. Grave nervous affections, suddenly setting in without any motive whatever, are therefore always suspicious. It may depend on non-syphilitic neoplasmata, but these are far more rare than the syphilitic affections, and show mostly a more gradual development of symptoms and a fixed grouping hinting to its solitary seat.

We acknowledge that lues may produce all sorts of nervous manifestations, but there are certain symptoms which are more frequently caused by it, and wherever we cannot find any other cause, we are justified in suspecting lues.

The internal habitus of persons, suffering from cerebral lues, shows usually great peculiarities, except when a severe paroxysm exists. The features are relaxed, empty, and give a fatuous impression, even where the intelligence is not yet greatly affected. The sight does not remain fixed, and still it shows some rigidity. The posture is relaxed, thrown forward. In walking, even where there is not a symptom of paresis, the head and the upper body is thrown forward, nearly as in paralysis agitans. In some severe cases a kind of desire to run was observed, *i. e.*, a pushing forward with the body bent forward, so that the nurse had to keep the patient back. With most of them the gait is uncertain, staggering, tottering, even where the muscular force is perfectly normal.

Maniacal paroxysms of extreme severity, and with the most senseless fury, are frequent. But the rule is a fatuous state from the slightest symptoms to the most perfect idiocy. Traces of fatuity are hardly ever absent in brain-syphilis; the memory is mostly weakened, the power of deliberation and of expression of thoughts slow and vacillating. An inclination to weep or to laugh, a behavior which we might expect from a hysteric patient, peevishness and a childish behavior, a kind of pusillanimity, is found in persons, where we as yet observe very little of cerebral troubles, and whose mind during health showed no such disposition. Or the childish hysteric behavior remains in the remissions, or after the more severe symptoms have passed off. Among such changes of character we also witness an obstinate self-will, but

which will give way when rightly directed, and an inclination to get angry at the slightest provocation.

Attacks of vertigo, of syncope, of apoplectiform fits, are frequent symptoms in brain-syphilis. The latter may appear with or without hemiplegia, and may show every grade of intensity. Just in these apoplectiform fits, the diagnosis is often very difficult, but the mode of attack deviates in lues, and we must consider the accompanying manifestations, the mingling of the palsies and the whole course of the disease, in order to come to the right conclusion. In severe cases we usually find at some time, either at the beginning of the symptoms, or in addition to an apoplectiform, maniacal, or epileptic fit, or when the disease increases, a more or less deep sopor, sometimes even the most severe coma. This unconsciousness is sometimes only of short duration, but may also last for several weeks or months. Cataleptic admixtures are not rare, and sometimes we even meet a *fatuitas attonita*.

Blindness is very frequent. It often appears suddenly, but usually is of a transitory nature. The ophthalmoscopic examination mostly gives negative results. Deafness is here and there observed, and passes off surprisingly quick. Still more rare is the absence of smell, and only a few times have I observed a transient loss of taste.

In the so usual neuralgiæ of syphilitic patients, the pains are mostly of peripheric origin. The severe headaches, pains in the back, and such neuralgiæ, appearing at once or alternately in several nerve-trunks, or whose extension does not correspond to the region of one nerve, hint to lues of the nerve-centres or of their membranes.

Anomalies of speech are very frequent in cerebral lues. We meet full aphasia, but far more frequently a state approaching to it; or we meet a full aphasia, where the patient can only utter one or a few words, which he replies to all questions, without the corresponding right-sided hemiplegia, which may also pass off after a few hours or days, to be followed by other disturbances of speech. In a male patient, where the brain-lues ended in incurable dementia, the disease began with sudden loss of speech during a visit. Although speech returned very soon, and no other symptom showed itself, the patient felt troubled and returned home.

Arrived at the depot, he calls for a cab, but at that moment again loses his speech, and cannot tell where he lives. Luckily he has a letter with his address, shows this to the driver, and arrives at his house; speech has again returned to him. This was soon followed by other symptoms; the aphasia also returned, and severe lasting difficulties of speech set in. More frequently than pure aphasia is the loss of a limited number of expressions, of syllables, or letters, which the patient also finds impossible to write. This limited aphasia is usually amnesic, but it may happen that the patient, from a kind of habit in speaking or writing, drops words, syllables, letters, which he can repeat or imitate in writing. Sometimes, though with difficulty, he tries for a number of times in vain to get out the word or the syllable, till finally he succeeds. The paraphasic mistake of words, syllables, or letters is also very frequent, and becomes by habit a very characteristic deviation. A hesitating, abrupt mode of speech is very frequent with such patients, and nearly every one of them has a kind of slowness in pronouncing his words. Disturbances of articulation are also frequent with the other disturbances of speech, and may modify them.

In other cases intelligence becomes obstructed, and complicates the disturbances of speech. Sometimes, during the course of the disease, a change in the mode of articulation is observed. A few years ago we treated such a patient, who at first obstinately kept silence, or replied yes or no in a sensible manner. Then, for three weeks he lost the faculty of speech, was dull of mind, apathic, but not comatose. When his mind became clearer, aphasia set in, and he replied to every question, "a pot." Even after improving, he remained fatuous, and only conversed like a little child, omitting all connective words in the infinitive mood, and mistook letters and syllables.

Spasms in every grade of intensity and extensity are frequently observed in cerebral lues, either as partial twitchings or short-lasting, but extensive shocks, or tetaniform and epileptiform paroxysms. We meet especially the latter in most varying degrees, and they are always a grave sign. Epileptiform convulsions are not only more severe, but also more continuous than in common epilepsy, may last uninterruptedly for hours and days, and repeat

themselves at short intervals. Twenty or thirty epileptiform fits in one day are nothing unusual. At the same time sensibility to external stimuli and consciousness are not always suspended, and it is easily seen that the patients suffer severely under these shocks, and sometimes they have a dull remembrance of the fit.

Very peculiar are the partial contractions, which may appear in any muscular group, but most frequently on the biceps and rectus externus. Active and passive mobility may be still preserved to a certain degree, *e. g.*, the forearm may be easily extended or flexed under certain limits, but at one point all extension ceases, as the biceps does not allow any further relaxation. This symptom usually lasts for some time, and may even remain after the patient is cured.

The manifestations of motory paralysis in syphilis of the brain and spinal cord are manifold. We meet very often paralysis in the nerves of the head, especially in the oculomotorius, abducens, facialis, and hypoglossus. Topical paralysis of certain muscular groups, even of solitary muscles, is frequent, but also total hemiplegia and paraplegia. The latter is sometimes rapidly ascending or may join an already existing local paralysis. In a case which was for seven years under observation, and who died from an accidental bronchitis, the disease began with deafness, then severe cephalic neuralgia, the year following painful contracture of the left arm, four years afterwards twitchings in the right arm with traces of paralysis, seven weeks later an ascending paraplegia set in, the paralysis gradually extending over the legs, bladder, rectum, arms, and neck. On the tenth day the tongue became paralyzed; on the eleventh, the fauces; on the twelfth, the diaphragm; on the thirteenth, ptosis of the right eyelid. The patient respired weakly, but consciousness was clear. Energetic mercurial inunction stopped the progress of the disease. Already after a week the progress was remarkable, and four months after the beginning of the ascending paralysis the patient could walk with the aid of a cane. But we also meet permanent paraplegia and tabetic forms (with loss of balance when the eyes are closed), the latter not pure, and intermixed at an early date with emaciation and a real decrease of motor power, especially in spinal lues.

Involuntary discharge of urine and fæces is frequent, even

without paralysis of the sphincters, or stupor, or delirium. It appears more as a symptom of carelessness or of total loss of a sense for cleanliness, or they pass urine and fæces in any place which suits them, but only where they ought not to do it. Even patients without any considerable mental alteration have been found guilty of such uncleanliness.

Sexual functions are nearly always changed. Patients without any considerable psychical disturbance, and where no paraplegia exists, mostly show the sexual nisus entirely extinct, and become at once frigid or impotent. On the other side, during maniacal paroxysms, sexual desires may become enormously increased, sometimes also during fatuity, where the patient, indifferent to everything and even to his food, becomes crazed at the sight of a woman, or masturbates day and night. Even when already comatose the onanism may continue, and they try to put their hands to their sexual organs. Frigidity and satyriasis may alternate one with another; the former happens during intermissions and amelioration, the latter during exacerbations and in more severe forms.

Heubner draws our attention to the fragmentary exhibition of luetic nervous symptoms, and remarks (p. 225): The characteristic of general syphilitic brain-disturbance is its imperfection of the grave symptoms, a clouded consciousness but no full deprivation, voluntary activity at a low ebb and still the will gives impulse, a half-sleep, half-waking, half-dreaming. Thus we meet unexpected expressions of thought in apparently deep soporous patients; epileptic spasms with perfect consciousness; relaxation with considerable exhibition of power; excessive contraction of a muscle at one point, from there onward active and passive motion normal. On the other side we sometimes meet the intensity of solitary manifestations perfectly enormous, thus: the maniacal fury; the most deplorable dementia; the severity of the pains and of the convulsions; the power and variety of motions in the syphilitic chorea; the stiffness of the contracted muscles; the perfection of a partial paralysis.

The diagnosis of such syphilitic diseases is advanced by the combination of several symptoms. We also meet, in other cerebral diseases, combinations of different symptom-groups: focal symptoms with diffuse manifestations; right-sided hemiplegia

with aphasia; headaches with paralysis of the extremities, etc. But all such combinations can be explained by the seat of the disease. In lues, on the contrary, combinations exist which could not be produced by a localized focus of the disease, and which are never witnessed in other brain or spinal diseases. Such combinations are: unilateral ptosis with mania or stupor; ptosis on one side and paralysis of the abdomen on the other; crosswise paralysis of the oculomotorius and facialis; general debility and relaxation with slight hemiplegic symptoms; aphasia with left-sided or alternating hemiplegia; twitching with paralysis; different grave cerebral symptoms with choreic movements. The combinations may be rare or very numerous, which certainly always renders the case more dangerous.

The course of the disease is still more decisive for the syphilitic nature of the symptoms. The manifestations of cerebral lues are partly permanent (that of spinal lues always), and only change in their gradual increase of intensity and combination, and, where amelioration takes place, in their equally gradual decrease; very frequently they are only transient, a constant kaleidoscopic change of symptoms is witnessed, which could only be compared to hysteria. Some patients give us nearly every symptom ever observed in cerebral lues, in others the numbers of symptoms observed remain very limited. Cerebral lues thus gives us different types of its course, but there are peculiar rules in this variety. It may kill acutissime, or slowly lead to the fatal issue, pass off quickly or gradually, draw out its own length in constant relapses, and in spite of all these differences there are still numerous peculiarities, which are characteristic for the syphilitic nature of the disease.

In most cases we meet, for a shorter or longer period, slight manifestations, too frequently overlooked by the patient and others, or from time to time abrupt manifestations quickly passing off (syncope, sudden and quickly passing off aphasia, momentary pain in a nerve), and on account of their evanescent character the patient treats them lightly. We might call this the prodromal stage, although such an expression might allow a false construction.

The grave disturbances exceptionally may follow in gradual development, mostly they come foudroyant: syncope, sudden aphasia, epileptiform or apoplectiform fit, sudden partial paralysis,



blindness; or they appear in rapid progress: acute melancholia and mania, loss of will-power, stupor, unbearable headache and other neuralgiæ, choreic and cataleptic phenomena, rapidly ascending paraplegia. They frequently simulate the impression of acute meningitic, acute encephalitic, or myelitic processes. Such a patient, considered perfectly healthy or only slightly ill, offers in a few days the picture of a severe and dangerous case. At first, with such a severe beginning, very few physicians will think such an attack caused by lues. It is justifiable to diagnose such a case according to the symptoms as a blood-extravasation, an emboly, a meningitis, encephalitis, or myelitis, or rheumatic gouty troubles, or a nervous delirium, a common epileptic fit, etc. But even at the first onset the cumulation of symptoms and symptom-groups, or the imperfectness and the fragmentariness of the attack, ought to rouse a suspicion of luetic origin.

It may happen, although rarely, that after the sudden appearance of grave symptoms the disease runs rapidly its fatal course in a few days or hours; its syphilitic nature may remain unknown, and only in the autopsy the changes and combinations in the brain clear up the case, as we find in the bones and membranes, and especially in the bloodvessels, alterations clearly hinting to a chronic state, and excluding by their extent a merely local trouble; in most cases after the first onset symptoms set in, leading the attentive physician to the specific nature of the disease.

In cases of cerebral lues, rapidly tending to death, we often witness that manifestations, which are apt to continue in severe focal diseases of the brain (an extravasation, emboly), or in meningitis up to the very extinction of life, as stupor, aphasia, semi-lateral paralysis, suddenly and rapidly pass off, although the patient has not improved, or that, whereas the extremities, first attacked by paralysis, regain their mobility, others become attacked; that the most severe manifestations alternate, which could never happen in a destruction, compression, or lasting interruption of the circulation in the corresponding spot of the brain. Although, left to themselves, such cases usually result in death, still an energetic specific treatment may avert the fatal doom.

But we do not always meet such changes; the disease may steadily progress in the most fearful manner; epileptic fits one

after another with stupor during the intervals; rapidly increasing dementia after maniacal excitement and for some time alternating with it; constantly deepening coma, with a moderate fever, but the pulse steadily growing weaker; rapidly ascending paraplegia becoming general; or an originally limited paralysis of a cerebral nerve extending to the other ones, with stupor. In such cases death may be expected any day; still energetic specific treatment offers our only chance, and continued specific treatment may procure a decided amelioration even in such a fearful state. It is not necessary to be fully convinced of the luetic nature of the disease.

In other cases the symptoms are not of such extreme severity. After the attack the disease remains frequently in statu quo, lasting more or less long in the same manner, or oscillating or intermitting, as especially in neuralgiæ, chorea, contractions, partial palsies, fragmentary stupor, or when some symptoms cease others set in. After a varying interval a gradual or sudden aggravation may set in, or with specific treatment a decided and rapidly progressing amelioration takes place. In other cases the paroxysms, may the symptoms have been severe or light, pass off without any treatment. The deep syncope ceases, and it seems as if it had been of very little importance, or the aphasia ceases after a few hours or days. The mania is followed by quiet, and the epileptic fit passes off like any other one; the hemiplegia or local paralysis, the limited convulsion or neuralgia passes off rapidly, but such a spontaneous disappearance is not a cure. A careful observer will find out slightly continuing anomalies, revealing the latent disease. But even where everything appears normal, after a shorter or longer interval a new attack supervenes in some form or another, and grave symptoms will soon be added, especially with a changing character and seat of every successive paroxysm. Other cases, on the contrary, show a slow but steady course; still careful inquiries will always reveal the precedence of some slight paroxysm and the sudden appearance of paroxysmal aggravations and ameliorations. In spinal lues such a regular, steady, onward course of the disease may be considered the rule.

Cerebral lues, with the exception of such cases which run their course very rapidly or are very inveterate, offers a far more successful therapeia than spinal lues. In some cases amelioration may

even set in spontaneously, but it never lasts long. We fare well by putting our chief reliance on an energetic mercurial or Kali hydrojod. cure, on warm baths, which I like to be similar to the waters of Aix-la-chapelle (a sulphur spring possessing an alkaline, saltish, and sulphurous taste; the bath is usually given at from 92° to 96° F.), which moderate the severity of the symptoms and in many cases entirely remove them. It might be truly said: in a patient suffering from grave cerebral symptoms the prognosis for amelioration or a cure is far better when he was syphilitic. Many a case, where treatment at home failed, steadily progressed at Aix-la-chapelle. In spinal lues our success is far more imperfect and rare.

Still it would be wrong to hope for a perfect cure, and in many cases we must be satisfied with a moderation of the symptoms and their temporary limitation. We must always fear after luetic cerebral symptoms of weak patients, suffering from hereditary or other disposition to mental diseases, that the latter would increase by the syphilitic state, and finally break out in full force; even in our best cases the danger of relapse remains, though the interval may be a long one; splendid cases of cures are found in medical literature, but we hardly ever expect a perfect *restitutio at integrum*. Looking at them in a general way, such patients may appear free from disease, and too often they consider themselves so. They are not much trouble, and even able to perform some work. But at the closer examination we find that the former freshness of mind, the capacity of mental labor, the perspicuity of judgment, the feeling of conception, the even tenor, the steadiness of memory, the full and ready flow of speech, the will-power and muscular endurance, the sensitiveness of the senses, are all more or less impaired. Such a state impresses on the organism an indelible character, and every part of the body, once severely affected, will henceforth show the traces of the alteration it passed through. We must soon be satisfied with precocious senility of the brain. It would be interesting to know how long individuals, after an apparently perfect cure of cerebral lues, remain on an average healthy, how long they live, and how they finally die.

It only remains to hint that there are diseased states, showing a similar variety of symptoms, and which offer some difficulty in

distinguishing them from cerebral and spinal lues. One of them is hysteria. The difficulty still increases, inasmuch as hysterical patients may become syphilitic, and on the other side lues itself is apt to cause an ill-humor closely resembling hysteria, and thus the question may arise, how much is due to lues, how much to hysteria. Another disease, also similar to syphilis, and frequently combined with it, is the potatorium. The symptoms of cerebral lues frequently correspond fully to the most beastly intoxication, and the whole impression of such a case, and many lasting symptoms belong to syphilis as well as to chronic alcoholismus.—Volkman's *Klin. Vorträge*, No. 93.

Bumstead and Van Buren, in their respective works on syphilis, give a chapter to the syphilitic affections of the brain and spinal cord, and both these eminent authors agree with the German professor, that safety lies only in the thorough application of the specifics, Mercury and Iodide of potash, and treatment continued for months, and even for years. Cases enough are on record to prove the beneficial action of such treatment, and the detriment arising by fooling the time away by other experiments. Here our allopathic friends acknowledge the principle of the single remedy, and rely for months on its sole beneficial action; and the question for us to decide is not whether the dose is not in harmony with homœopathic principles, but whether mercurials and Iodide of potash act on the principle of *similia similibus curantur*, and whether these large doses are not the suitable doses for the diseased condition, and then let us examine whether we have any other remedy or remedies covering these various abnormal states of the nervous system.

What does Jahr teach? or what do we find in Yeldham? Syphilitic nervous disorders are hardly mentioned, and still we may pick up many a grain to aid us in the solution of our question. Thus, in speaking of Mercury, the venerable author, so lately deceased (Jahr's *Veneral Diseases*, page 400), says: "Any one who, finding even half a grain of the first centesimal trituration of Mercury insufficient, prescribes one or two grains of the same trituration, may deviate from the letter of Hahnemann, but, nevertheless, remains true to the spirit of his doctrine. This doc-

trine demands that the dose should be sufficiently small not to produce any unnecessary or injurious effects; but that, on the other hand, it is to be sufficiently large to effect a cure as radically and promptly as possible." *Medio tutissimus ibis!*!

Yeldham (*Venereal Diseases*, page 139) remarks that "restoration from these attacks is slow and tedious, and the treatment correspondingly protracted and varied. Of medicines, the *Iodide of mercury* and the *Kali hydrojodicum*, as aimed more directly at the cause of the disease, hold prominent places. The latter, especially, should be persevered in for a considerable time. Amendment commonly attends on its exhibition." Page 83, the same author remarks: "A considerable modification of the doses ordinarily recommended in homœopathic books is requisite. These quantities are far too small. It must not be lost sight of that, in treating syphilis, we have to deal with a disease engendered by the operation of a virulent poison. This poison must be neutralized, and to effect this the remedy requires to be administered in quantities which, though still very small (three grains of the first, or five to ten grains of the second decimal, three times a day), are comparatively large. The Iodides of mercury are best suited to secondary and tertiary syphilis." Of *Kali hydrojodicum* he speaks in the same language, and to obtain its full curative action he gives five grains or more of the salt, three times a day, in aqueous solution. A weekly alternation of the *Iodide of mercury* and of the *Iodide of potash* sometimes succeeds, when either single remedy failed to cure. The principal indications for its use are a scrofulous and debilitated constitution, enlarged glands in the groin, the throat, or neck; the previous exhibition of *Mercury* in excess, marked by red and inflamed gums, sore throat, foul breath, nocturnal bone-pains.

Bumstead (*On Venereal Diseases*, 622) gives as symptoms of syphilitic *meningeal affections*: Pain of a persistent character, confined to one portion of the cranium, attacks of vertigo and epileptiform convulsions. Nausea and vomiting, and visual disturbance, as photophobia or strabismus, may attend similar lesions of the meninges covering the cerebellum.

*Syphilitic encephalitis* is characterized by the presence, in the midst of the nervous substance, of small rounded nuclei; the

network of the brain is sometimes thickened, and abundant fatty granules are found in it, provided the neoplasm and the affected nervous elements are already partially disorganized (true cerebral sclerosis). *Gummy tumors* are found everywhere in the brain, varying in size from that of a pea to a walnut, of a whitish or yellowish color, and though at first firm and almost cartilaginous, afterwards become soft, in consequence of fatty degeneration. The symptoms vary according to the seat of the syphilitic affection. In general, however, locomotor disturbance, as hemiplegia or paralysis of a single set of muscles, is indicative of partial encephalitis. Imperfect memory, difficulty of speech, and imbecility, are most frequently connected with some lesion of the periphery of the brain. Gummy tumors cause severe and persistent headache, vertigo, sudden loss of consciousness; sometimes somnolence, delirium, and coma. Convulsive attacks, confined to one-half of the body, with partial loss of muscular power, or sometimes diminution of sensibility; epileptiform convulsions, differing from common epilepsy by the severe headache, setting in some time before the attack, by the absence of aura, the partial retention of consciousness during the fit, and the persistence of brain symptoms during the interval. Syphilitic hemiplegia is a late symptom, and most patients are under forty years of age, a fact of diagnostic value, since hemiplegia from other causes usually occurs later in life. Patients rarely lose their consciousness, but complain at most of a dizzy sensation; sensibility may be even exaggerated.

INSANITY—GENERAL PARALYSIS OF THE INSANE.—Biggard (*Syphilitic Nervous Affections*, 27) differentiates strictly between genuine and syphilitic paralytic dementia. In the latter the disordered state of mind is apt to follow one or more attacks of apoplectic character, with accompanying sudden and complete paralysis; whereas, in the genuine one, the alteration in the intellectual faculties first attracts attention, and succeeding to this the tremor of the lips and mouth only too significantly betrays the fatal nature of the disorder. The motor disturbances of the limbs are of gradual development, and of paretic rather than paralytic character, and the motor affection generally involves the two sides of

the body to an almost equal degree. General paralysis of the insane runs also a somewhat definite course, varying ordinarily from several months to three years. In syphilitic dementia we find far more frequently complete paraplegia, and it is questionable whether the few cases of so-called "paralytic dementia," which were reported cured, were not of syphilitic origin, and therefore amenable to thorough and long-continued treatment.

Locomotor ataxia, this sclerosis of the posterior roots, is often of syphilitic origin, and dependent upon any low degeneration of the spinal cord.

Huebner (*l. c.*) has shown that brain syphilis shows its most characteristic phenomena in the cerebral arteries, causing manifold circulatory disturbances, and then, secondarily, by the affections in the cerebro-spinal system. Homœopathy confirms the value of mercurials in syphilitic diseases, for inasmuch as syphilis is a hæmatic virus, so the remedy corresponding to it must also be a hæmatic one, and Mercury does impoverish the blood by diminishing in it the amount of fibrin and corpuscles. Hughes, in his *Pharmacodynamics*, remarks, with great force, that Mercury touches the syphilitic virus only at certain points, where it is homœopathic and specifically curative, and it is the duty of our school to point out these points, and where Iodide of potash comes in its place. There cannot be mere random play; the indications for each can and must be found.

Hahnemann (*M. M.*, iii, p. 92) gives us the following symptoms, corresponding to syphilis of the nervous system: Vertigo, with staggering gait; dulness of mind; he hears not when asked a question; has difficulty in remembering what he has read, and makes mistakes easily when talking; difficulty of talking; he has great difficulty in collecting his senses, and gives wrong answers to questions (he knows it himself); complete vanishing of ideas; loss of consciousness and speech; headache, a pressing from within outward; headache, a pressing in the forehead and bone-pains below the eyebrows; dim-sightedness; black motes or mist before the eyes; difficult breathing, as if he had not air enough; complete loss of appetite; little appetite, but a good deal of hunger; continuous greediness for eating, he becomes weaker withal; contraction of the fingers of both hands, especially the

thumb, which is clenched, as in epilepsy; painful cramp of the fingers and hands; first they are stretched, making the bending difficult; after bending them the cramp contracts the fingers; the legs were pushed forward involuntarily; involuntary jerking of the lower limbs; faintness in the feet, she can scarcely drag them; faintness and weariness in all the limbs; palpitation of the heart; foolish behavior (symptoms 1260-1270).

Espanet, in his *Materia Medica (Homœolexique, ii, 190)*, considers Mercurius a venoso-lymphatic remedy. Its action on the nervous system shows itself by agitation, painfulness of the whole body, a bruised sensation, debility, trembling, convulsive motions, cramps, stiffness, over-excitability, extreme sensitiveness to pain, paralysis. Irascibility, followed by moroseness, aversion to all labor, dotage showing itself by instability, loss of memory, inability of following a train of ideas, weariness of life, automatic mania. The moral dissolution is in harmony with the somatic dissolution.

Gravier (*Homœolexique, 187*) finds the Mercur. corr., even in small allopathic doses, indicated in recent syphilis of male patients, where these, to us apparently large doses, will effect a cure without provoking even the slightest dysenteric symptom, whereas the solubilis suits more the female sex. Mercury can only be considered the specific antidote to the syphilitic virus in such cases where we also find at the same time the lymphatic system affected.

*Iodine*, according to Wallace, can never take the place of Mercury in syphilis; he considers it rather the complementary remedy, and finds it indicated in all tertiary manifestations, especially for the osseous affections, the tophi and the dolores osteocopi, for the gummata in the brain and liver, for the syphilitic neuralgiæ, for iritis during the tertiary stage, for sarcocele syphilitica. Nothnagle (*M. M., 257*) does not find such large doses necessary, as were formerly employed, and witnessed cures from relatively small doses (0.15 to 0.3). Ricord (*Bull. de Therap., 17, 1839*) puts it down as an axiom, that secondary syphilis needed mercurials for its eradication, but tertiary syphilis gives way only to preparations of Iodine, and we are more sure of its beneficial effect, according to Rodet, where no Mercury had been taken. According to Trousseau, tertiary affections of the bones, nodi, tophi, gummata, etc.,



are more quickly removed by the use of the iodides, than visceral syphilis, where mercurials are after all often necessary for a radical cure. Koehler (*Therapeutics and M. M.*, 553) recommends the iodides in diseases of nerve-centres and of nerves, in order to produce either the absorption of effused serum or of blood-extravasations, or for the removal of products of periostitis, of hypertrophied glands, etc., which acted injuriously by their pressure on nerves, or to reduce the abnormally increased reflex activity in certain neuroses. Syphilis and scrofulosis remain the only pathological states, where the old school gives us sure indications for the application of Iodine and its salts.

Our own Hughes (*Pharmacodynamics*, 323) remarks that the influence of Iodine upon the nervous system is only seen when the system is saturated with it (iodism). It has most power in the motor sphere, causing here a trembling of the extremities resembling the tremor mercurialis, which sometimes goes on to twitchings and other convulsive movements, and sometimes shows its essentially asthenic character by terminating in paralysis. In the sensory sphere we find obscuration of sight, partial deafness, illusions of the sense of touch, etc. In the ideational and emotional sphere there is great and lasting anxiety and despondency, the patients occupying themselves with the present. When the same author complains, in his second edition, that the pathogenesis of the Iodide of Potassium fails to explain its great field of action in secondary and tertiary syphilis, he most probably had not read Korndœrffer's *Comparative Materia Medica*, for there we read as characteristics of the salt: The Kali hyd. patient is bloated, emaciated, empty, but not hungry; suffers from smothering spells and œdema; must get up. It is the character of the iodide to produce repeated attacks, thus rendering the disease chronic; anxiety, starts at the least noise; torturing anguish prevents sleep; violent headache; hard lumps on the cranium; pains intense; eyes prominent from œdema; chemosis; p. 96, Korndœrffer compares the principal salts of Potassa, and here we read: Talkativeness and excitement as a part of the Iodine drunkenness; a stupid, intoxicated state of mind, with melancholy, indifference, and apathy; in chronic headaches, coldness of the painful part, relieved by external warmth; paresis more than paralysis, contraction of the

tendons, distortion of the limbs; periosteal and osseous inflammation, with interstitial infiltration; gnawing, boring pains, worse at night; discharges of ulcers thin, corroding, ichorous; diminution of the sexual desire; it comes into play in chronic myelitis and meningitis; back feels as if in a vice, limbs contracted; it absorbs normal fat; it develops inflammations, which tend toward infiltration, œdema, necrosis.

A comparison of the symptoms of the Iodide of Potassium with Mercury shows that Wallace is right in considering the former only the complementary of the latter, and both remedies are strictly homœopathic to the diseased states. We doubt whether Wunderlich's large doses are necessary for a cure, especially as even allopathic sources recommend a milder treatment; but even if it were so, we would be justified in giving the larger doses as the only suitable ones to the case in question, and such treatment is fully based on our grand law of *similia similibus curantur*.

Allopathic therapeutics stop here; our school has a far richer armamentarium, and we may be allowed to compare some of them with the symptoms of syphilitic nervous disorders. Thus we find under

*Aurum* (*Allen's Encyclopedia*, ii, p. 1): Memory impaired; sullen mood and taciturnity; confusion of the head; small bony tumor on the upper part of the left side of the forehead; small bony tumor on the right side of the vertex, with boring pains, that grow worse when the tumor is touched; pressive pain in the temples; his sight is lost for a moment; sense of deafness; hardness of hearing; the sexual desire, which has been dormant in him for a long time, is roused; full of lewd fancies, the penis being small and relaxed; numbness and insensibility of the arms and legs.

*Aurum mur.* (*l. c.*, ii, 14): Weakness of memory; unreasonable contrariety; confusion of the head; frequent dizziness; weakness of visual power; unusual prostration of the limbs.

Teste (*M. M.*, 596) tells us that even the ancients used gold for the injurious effects of Mercury, for melancholy, epilepsy, weakness of sight, foul breath, palpitations, etc. The French school employed it in bone-pains and old cutaneous affections of a syphilitic nature. Hughes (*Pharmacodynamics*, 3d edition, 154) allows *Aurum* a high place in many of the tertiary manifestations of the

disease, especially in the cachexic and osseous affections, and he considers it an admirable remedy for those constitutions broken down by the combined influence of syphilis and Mercury. Hughes and Bayes consider the melancholy of Aurum not primarily seated in the brain, but rather in the liver or testes, but Heubner has shown that the same changes take place in the bloodvessels of the brain, which Arnold Beer (*Eingeweide-syphilis*) demonstrated in the liver, spleen, kidneys, and other viscera. We have to deal in such cases with a constitutional syphilis, affecting equally nearly every organ of the body, and whether the affection of the brain is a primary or secondary one, remains the same as long as we must remove the virus, contaminating the whole blood-mass, before too serious degenerative lesions have taken place.

*Daphne mezereum* gives us syphilitic bone-pains in the bones of the skull, worse at night, as well as also mercurial cachexia. There is hardly a remedy which gives more decidedly the picture of syphilitic brain disease than this drug. Hahnemann (*Chron. Dis.*, iv, 220) gives the following symptoms: Taciturn, weary of life; indifference to everybody and to everything; disposition to reproach others; forgetfulness and absent-mindedness; head feels dull, dizzy; he knows not what he is about; fainting sort of vertigo; headache close under the skull, as if the brain were being pressed against the skull; clawing, pinching, continued headache; bone-pains in the bones of the skull, especially aggravated by contact; pressure in the eyes, as if the balls were too large; dilatation of the pupils; scintillations before the eyes; pale face, wretched appearance; an involuntary emission of semen is followed by a violent excitation of the sexual desire, with tingling in the whole body, as if caused by excessive lewdness (after three weeks); clawing and boring sensations in the joints; painful weariness in the arms; bone-pains of the thighs and legs; unsteadiness of the joints, as if they would break down; weakness, exhaustion.

Hughes (*l. c.*, 404) remarks that *Mezereum* has a long-standing reputation for affections of the periosteum, and that it is useful, where the old school prescribes the Iodide of Potassium. Granier (*l. c.*, ii, 205) considers this drug the most homogeneous to Mercury; like it it shows an elective action to the lymphatic system, to the mucous membranes, to the skin, and to the osseous system.

Buck (*M. M.*) considers it chiefly useful after Mercury, complementary to it.

*Stillingia sylvatica.*—Hale (*Therapeutics*, 693) considers the action of *Stillingia* closely resembling that of *Kali. jod.*, *Mezereum*, *Mercurius*, and *Phytolacca*, and relates a case of secondary syphilis, where the patient, suffering from immense nodes, became, from the most deplorable (sometimes almost raving, from derangement), thin-looking object, again buoyant, rotund-looking. We find in the pathogenesis of the Queen's-root: intellect dull and stupid; depression of spirits, with gloomy forebodings; a feeling as of a heavy substance pressing upon the brain (frontal region). After a time the pain becomes sharp and darting, in fact almost unbearable; dizziness with throbbing in the head; periostitis and nodes.

*Phytolacca decandra.*—We quote from Hale (*l. c.*, 498) that it shows curative power over affections of the fibrous tissues and the periosteum, be they rheumatic or syphilitic in their origin, and Hering (*M. M.*, 451) gives several cases of secondary syphilis wonderfully relieved by the use of pokeroor, or an infusion of the berries. Still we do not find that *Phytolacca* corresponds to the symptoms of syphilitic nervous disorders. It is true, we find impotence, vertigo, and impairment of vision, a sensation of soreness deep in the brain, spinal irritation, neuralgic pains in the extremities, great weakness and prostration, but the paralytic symptoms are entirely absent. After all we may use it perhaps with great advantage in the early secondary stage of syphilis, before the virus gathered strength enough to shatter the nervous system.

*Kali bichromicum.*—Drysdale, in his monograph on this drug, remarks, that we have in this remedy a close simile not only to the indurated chancre, but it also gives us of the secondary symptoms the rash on the skin, the sore throat, periosteal pains, and lastly the diseases of the skin, chiefly of a pustular character, which have the hard dark scab, and leave the depressed cicatrix. We agree with Hughes (*l. c.*, 349) that *Kali bichrom.* is of no service in idiopathic nervous affections; hence all its symptoms point to a chronic virus which produces them, be it syphilitic or rheumatic. The nervous headaches are confined to a small spot;

sudden, transient attacks of vertigo ; great trembling, with excessive weakness and cachectic appearance.

*Nitri acidum*.—Hahnemann (*Chronic Diseases*, iv, 338) gives us the following hints: Diseases of the periosteum and bones, especially chronic inflammation of those parts; epilepsy, the fits being relieved by riding in a carriage; secondary syphilis; syphilis, with hydrargyrosis; despondency; sad mood; hopelessness; indifference; irritable disposition; striking decrease of memory, while the bodily strength increases; she has no ideas; comprehends nothing, does not understand what people tell her; a sort of raving, as if he were delirious, with coldness of the body and inclination to fall; cloudiness and dizziness of the head; blepharoptosis; deficient sexual desire; dull pain, as from weariness, in the extremities; when shaking the arm it feels paralytic; paralytic pain in the leg, with excessive heaviness and lassitude; cramplike stiffness of the back and whole body, etc., etc. Kafka (*Hom. Therapie*, ii, 657) uses this drug in complicated and old cases, with many secondary and tertiary manifestations; thus in syphilitic hypertrophy of the liver, especially where the patient has been mercurialized, and still the disease kept on to undermine his health, or where the organism from the very start failed to be benefited by Mercury. Inasmuch as high dilutions, according to Hughes (*l. c.*, 29), have been used with advantage in affections of the anus, and as it is nearly specific for the nervous patches, we are satisfied in expecting good results from its use, even in the potencies, in similar syphilitic affections of the nervous system.

*Syphilinum*.—I really do not know how to introduce this important remedy to my readers. Several ladies and gentlemen have made a proving of it, but it acts so powerfully that a second trial was refused. Its action on the nervous system we are just learning to appreciate, and when better known, it may lessen the number of incurable nervous disorders. Among its symptoms in relation to the brain we find: Loss of memory, partial or entire; loses remembrance of passing occurrences, names, dates, etc., while all occurrences previous to the inception of the disease are distinctly remembered; there is great difficulty, and sometimes impossibility, of concentrating the thoughts on particular subjects, yet at the same time can recollect consecutive events and

details which occurred twenty-five or thirty years previously, in their order of occurrence, almost without an effort; pains in the back, especially in the region of the kidneys; worse after urination, etc., etc. Sixteen years ago Dr. Czuzias Turenne lectured on and practiced syphilization, and Prof. Boeck, of Christiania, inoculates the syphilitic virus in order to confer immunity against this virus, and experience taught him that syphilization improves the general health, when it was previously impaired. Several of our provers also enjoy now better health than formerly. If Father Hahnemann was justified in teaching that all chronic diseases originate in psora, syphilis, and sycosis, and inasmuch as even in his days his disciples taught us the great value of psoricum, have we not the same right, not only to prove the poison of syphilis, but also to apply it, just as Boeck did, for the eradication of this foul disorder not only, but also to eradicate the hereditary influence, passing from ascendant to descendant, and increasing constantly the degeneration of the bioplasma? Dare to try everything, reject nothing, so that humanity may be the gainer.

At a meeting of the homœopathic physicians of Berlin (Germany), syphilis was the theme for discussion. (*Hirschel's Zeitschrift*, Jan. 1876.)

Dr. Sorge declared that he could not strictly differentiate between the venery of the soft and the syphilis of the hard Hunterian chancre, and that there are certainly intermediate states. Prof. Waerensprung opposes the use of Mercury in any form, inasmuch as tertiary forms, in general severe cases, are only seen after the use of Mercury. The late Dr. Graefe witnessed severe cerebral affections and paralysis in cases where not a grain of Mercury had been employed, and his chief remedy in severe syphilitic affections is the Hg. bijodatum rubrum dissolved in water, aided by Kali jodatum. Sorge believes that severe and destructive diseases of the periosteum, of the fauces, and septum naris, may be caused by the abuse of Mercury, especially by the employment of gray ointment; light cases get well anyhow, but severe cases need strong doses of Mercury. He uses Merc. cor. in the second decimal solution, dissolved in alcohol of 45°, three times daily, ten to twelve drops, or of HgO rubrum, first or

second decimal trituration, thrice daily, two to three grains. The first trituration produces in some cases stomatitis mercurialis. One of my patients wished to marry. A large packet of indurated inguinal glands remained. For a whole year he took my second solution of Merc. cor., till every vestige of the disease had disappeared. No roseola, but a moderate angina set in during the treatment. I have known him for years, and husband and wife enjoy the very best of health.

Dr. Windelband prescribes the solution of Merc. cor. in salt water, as the stomach takes more easily to it, or he makes a double salt by dissolving simultaneously Natr. mur. and Merc. cor. After Mercury he frequently uses Tinct. cupr. acet. Radem., three to five drops every three hours; especially where there is a languid suppuration in the groins, fauces, or the skin. The intermediate use of Cuprum, Sulphur, or Iron, *pro re nata*, restores again the curative power of Mercury. The worst cases are those suddenly appearing, or slowly creeping ulcers on the fauces and soft palate, after the abuse of Mercury; they destroy rapidly the bony wall of the pharynx or the whole soft palate. Nitri acidum is here the right remedy, but we have no time to lose with mere internal administration; we must also cauterize the affected parts with the concentrated acid every two or three days. Use a glass rod or a camel's-hair pencil for that purpose.

Dr. Traeger agrees to such treatment. Fisher uses  $\text{NO}_3$ , when syphilis becomes mixed up with mercurial cachexia, in the thirteenth decimal solution. He usually gives Mercurius twice a day in the second decimal trituration. For glandular irritations in the groin, Carbo animalis is useful. Sulzer is against giving such large doses of Hg to patients; he only gives pro die 0.15 of the second X trituration of Merc. cor., and after two weeks HgO in the same dose, and cures his cases in about six weeks. Aurum metall., third to fourth X trituration, is indicated in perforating ulcers of the fauces.

Windelband frequently begins his treatment with Tinct. iod., five drops three times a day, without any preceding use of Hg. A student, who suffered from epilepsy since twelve years old, became infected with syphilis. An aura, beginning in the right leg, announced the fit; when the patient was quick enough to con-

strict his leg with a strap, so that it swelled up, the paroxysm did not set in; about two hours afterwards the strap could be loosened and the danger was over. After treatment for five years, especially with Kali jod., the patient could be declared cured. He is now married, and wife and children enjoy good health. *As soon as he became syphilitic his epileptic fits ceased.* Two necrotic chancres were cured with Jodoform, which caused healthy suppuration, without consecutive lues. The extensive destruction of the ulcer probably prevented the appearance of lues. It is a well-known fact that the male parent may procreate syphilitic children, while at the same time the mother remains healthy.

Sorge saw great improvement of numerous and painful condylomata lata, where the inunction cure had failed, by Tinct. cupr. acet. Radem., 1.80; also of a steadily progressing retinitis specifica by HgO<sub>2</sub>, and promises to report fully after the recovery of his patients.

Weil mentions that the Corros. stands in close relation to retinitis, and that Graefe used it often in dulness of the vitreous body. Sorge found that syphilis during improvement, when chased away from the skin, fauces, etc., shows itself again on the genitals and groin, as cancer and bubo redux. Windelband uses for acuminated condylomata pulv. herb. Sabinæ, as a local application; Sorge, Tinct. Sabinæ twice a day locally; others, the Liquor ferri acetici or sesquichlorati.

Sorge reported at a consecutive meeting the following case: A young man, of weak constitution, showed me, November 5th, a soft chancre on both sides of the frænulum, without any glandular swelling. Hg<sub>2</sub> thrice daily. November 9th to 13th, state the same; November 19th, tearing in the bones of the face, pains in the tonsils, gums swollen. The young man had been treated, for a peritonitis, with large doses of Hg, seven years ago. The frænulum was pierced, the ulcerated spots on both sides enlarged, and a small ulcer boring deeply into the gland. Tinct. cupri. acet. Rad., four times a day, three drops internally, and twice a day a drop externally, cured the ulcers; only the gums remained sensitive still for some time.

Windelband asked whether the pus from a bubo, in consequence of a soft chancre, is always poisonous, which was answered in the



affirmative. In iritis and retinitis specifica he uses successfully subcutaneous injections of Sol. merc. cor., 1 : 100, aq. dest., once or twice a day.

Deventer succeeds just as well with the internal use of HgO, or the corros.<sup>1st</sup>; thrice daily a dose. For ulcers and indurations of the tongue he uses Aurum muriat. natronatum; and for severe tertiary affections of the bones and skin, Hydrargyrum auratum, an amalgam, in the 1-3 centesimal trituration. Kalium jodatum brings amelioration in syphilitic bone-pains, but Sulzer and Mayländer prefer the first dilution of Mezereum.

We see from these reports that our Berlin colleagues treat syphilis in its different forms successfully with far smaller doses than the old school finds necessary; we see them recommend the remedies which have been mentioned already; but the Berlin physicians, one and all, use only the very lowest triturations. Our physicians, as well as those of Southern Europe, praise the rapid and thorough action of the high and highest potencies, and we must earnestly request them to give us their experience in the treatment of primary, secondary, and tertiary syphilis. We even call on our good friend, Dr. Samuel Swan, not to withhold any longer his provings of Syphilinum. We are well acquainted with several of the provers, and can vouch for them as physicians of strict integrity and truthfulness, and there is no doubt that Syphilinum in high potencies will fill a hiatus in our Materia Medica, which is too often felt in the treatment of many obstinate cases.

A very well-written article on syphilis of the nervous system, by Dr. Taylor, of New York, is found in the January number of that excellent periodical, *The Journal of Nervous and Mental Disease*, edited by Prof. J. S. Jewell; and we most cheerfully recommend this journal to our readers. In the *Practitioner* of May, 1875, is an article on the same subject, from which we extract the following characteristic hints:

1. The age of persons affected with syphilitic nervous disease ranges between 25 and 40.

2. A syphilitic history. We have here to bear in mind that it is often difficult to have such a history; that often, when the syphilitic virus selects for its locality the nervous system, there are few, if any, secondary symptoms; while, on the other hand, nervous troubles coming on in a syphilitic patient may be simply due to a coincidence. On looking over many recorded cases, we find that certain forms of syphilitic nervous disease are much oftener preceded by well-marked secondary symptoms than others; this, for instance, is true of syphilitic epilepsy, and the more acute cases of meningitis, which come on soon after infection.

3. Multiplicity of lesion. Nervous symptoms, which can only be accounted for by the assumption of separate pathological products, situated in different parts of the nervous system, are almost always due to nervous syphilis.

4. Absence of other causes. This applies particularly to the paralysis of the different cranial nerves, and to sudden attacks of hemiplegia in young persons, in the absence of any cardiac or renal troubles.

5. Influence of antisyphilitic treatment. In a great many cases, especially where the course of the nervous disease is acute, and where the patient has not previously undergone an antisyphilitic treatment, the effects of the Iodide and the Mercury are very marked. In the more chronic cases, where the syphilitic deposit has itself undergone degenerative changes, and has established secondary changes in the surrounding nerve-matters, the treatment will of necessity be of little avail. (Dr. J. Duschfield, of Manchester, England.)

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## ARTICLE XXVIII.—A Study on Phosphorus.

BY S. L.

A CASE OF ACUTE PHOSPHOR. POISONING, BY DR. MERING.

Miss D., 22 years old, took, July 10th, at 8 A.M., a cup of milk, in which she dissolved the phosphorus of a box of matches. She felt well till noon, when intense vomiting set in, continuing till the next morning. On the 11th, she suffered from diarrhœa, headache, debility, and severe burning in the epigastric region.

July 12th. She was admitted in the hospital.

July 13th. Status *præsens*: a strong woman, of middle size, well developed, and with good *panculus adiposus*. *Conjunctivæ* very yellow, whereas the evening before the icteric color was not yet so clearly defined. Face full, intensely red. Temperature hardly increased according to sensation; neither *œdemata* nor *exanthemata*; pulse regular, soft, not tense, quite narrow (yesterday very slow); to-day, far quicker, 120. No *dyspnœa*. Temperature 38.1.

Patient perfectly conscious; complains of severe thirst, headache, pains in *epigastrium*, and *præcordial* anguish. She is restless, and throws herself about in her bed. Lips and visible mucous membranes not very red. Tongue moist, with a white coating; *papillæ* intensely red, and slightly prominent. Nothing particular on *pharynx*. Headache all over the head; no point on the skull particularly sensitive to pressure. Thorax well formed, type of respiration *costo-abdominal*. Thorax expands moderately during breathing. Slight rhythmical pulsations in the cervical veins. Percussion-sound in front very full, loud, or both sides equal; auscultation reveals soft vesicular *inspirium*, and uncertain *expirium*. On the back, over the lungs, on the left side, begins a dulness at the seventh rib; above that dulness still a clear, but very weak vesicular breathing; *fremitus* somewhat diminished. When breathing deeply the niveau of the dulness changes for one intercostal space. Posteriorly left the pulmonary sound reaches to the tenth dorsal vertebra.

The dull sound of the heart greatly extended in breadth, passes over the right sternal edge, goes upwards to the middle of the second intercostal space, reaches on the left side not quite the *mammillary* line. Beat of the apex in the *parasternal* line in the fourth intercostal space. Sounds of the heart clear and very strong; only over the aorta both sounds of the heart rather dim. Systolic sound all over more clear than the diastolic one.

The dulness of the liver greatly enlarged. Its upper margin lies at the upper rim of the fifth rib, the lower one reaches down to the *umbilicus*; towards the left the left lobe passes over into the dull sound of the heart. Liver palpable, of moderately firm consistence. *Epigastrium* bloated up, very sensitive to pressure,

especially to the right of the sternal line; the palpation of the right lobe of the liver is also somewhat painful. Ileocæcal region dull, all elsewhere tympanitic sound. Spleen does not seem to be enlarged, nor is it palpable. Uterus does not reach over the symphysis; internal examination reveals uterus freely movable; vagina free; very little anteflexion inside of the normal limit; os uteri not open; no sputum, no stool. Urine 1400 Ccm., reddish-yellow, somewhat murky, acid, sp. gr. 1015, contains neither albumen nor sugar, and shows no reaction on the coloring matter of the bile.

Ordered small pieces of ice, ice-bladder. *Rj.* Ol. terebinth., *Æth.* sulf. *āā.* MDS. Ten drops every three hours.

Evening. Temperature 38.1, pulse 108. Posterior part of the eye normal.

July 14th. Enormous change. She lies with closed eyes; speaks incoherently, and grasps at anything that comes near to her. Extremities cool, chest and abdomen not very warm. Temperature 36.9, pulse 96. Redness of the face nearly gone, giving place to a decidedly yellowish paleness. Chest and abdomen icteric. When asked, patient shows her tongue, but neglects to put it back, although requested several times to do it. Sensorium very obtuse, but she does not complain of headache. Dulness of the liver today smaller than yesterday; the upper margin begins at the lower edge of the fifth rib, the lower margin unchanged. Pressure on the epigastrium very sensitive, also on the right lobe of the liver. Enlargement of spleen not perceivable. Dulness of the right heart increased. Sounds of the heart clear and strong. Abdomen not painful; everywhere tympanitic sound. Pulse can hardly be felt, very little tense, very small and low. No œdema. She vomited in the morning a quantity of brownish fluid, but no blood. No stool. Urine 1200 Cc., acid, clear, dark-yellow, no reaction of biliary coloring-matter. The vomited matter was free from blood, contained a great many drops of fat; in one place magnesium and ammonium phosphate was found. She did not eat any fatty substances yesterday. An examination of the blood showed nothing abnormal, only the colorless blood-corpuscles were somewhat increased in quantity.

Evening. Temperature 36.4. No pulse.

July 15th. Towards noon yesterday, copious black-brown bloody vomiting. The apathy kept on till 5 P.M.; then she roused up, answered questions, and kept her eyes open. Icterus did not increase, and towards evening her features were waxy-pale and distorted. During the afternoon, three copious, cadaverous-smelling, bloody stools. About 10 P.M. she became very restless, and died about midnight.

AUTOPSY.—Cadaver of middle size, adipose tissue and muscles well developed. Skin and both conjunctivæ icteric; abdomen meteoristic; both mammæ large and pendulous; diaphragm on the right lower edge of the fourth rib, and on the left upper edge of the same.

After opening the thorax, a copious deposit of fat in the mediastinum anticum. The left pleural cavity contains about 200 grammes of a bloody fluid; the right pleural cavity is in the lower part obliterated. In the upper parts of the mediastinum anticum numerous blood-extravasations, reaching over into the pleuræ. Nothing abnormal in the pericardium; heart with quantities of epicardial fat; right ventricle very wide, contains only a little coagulated blood; the left ventricle contains scanty fibrinous coagula of an icteric color; cardiac muscle pale, in some places yellowish-white; valvular apparatus normal; the muscular fibres of the heart tough, and yet friable. Left lung covered with a few pleuritic ecchymoses, of middle size, full of blood, moist on cutting, and contains a moderate quantity of air; right lung the same, only the ecchymoses are larger and more numerous.

After opening the abdomen, the gyri of the small intestines appear slaty, and like a deep, bluish-red marble; great meteorism; colon of a remarkable yellowish-white color; stomach dilated, and of a clear, yellowish-white color. Mesenterium full of fat, icteric, slightly imbibed with hæmatin; duodenum immensely dilated. Spleen hardly enlarged, tough, membrane somewhat thickened, parenchyma bloody, trabecular substance thickened. The stomach contains a dark-red, thick fluid mass, firmly adhering to the mucous membrane, and intermixed with a large quantity of a glossy mucus. The mucous membrane, which has imbibed large quantities of hæmatin, is pale, puffed, on some places slightly icteric; the liver pretty large, weight 1920 grammes, surface smooth, with

numerous small ecchymoses. When cut into, as also externally, the parenchyma remarkably anæmic, pale, of a sulphur-color; the large branches of the bloodvessels nearly empty, the form of the acini well preserved, acini of middle size, peripheral zone very broad, the centre small and mostly only visible as small red points; gall-bladder nearly empty, on the red mucous membrane a thick layer of a flocculent, grayish-yellow glossy mass. Retro-peritoneal tissue of the renal region slightly infiltrated from hæmorrhage; left kidney very large, clearly showing the forms of the vesiculi; the organ in its thick diameter enlarged, of a relaxed consistency, with strong injection of the bloodvessels, and numerous small ecchymoses. Surface saturated, yellow. Cortex enlarged in breadth; parenchyma very pale, of a yellowish-white color; the form of the fascicles greatly interrupted. The fatty tissue of the calices renales infiltrated with quantities of blood, and slightly œdematous. Bladder holds about a teaspoonful of murky, dark-yellow urine; it is contracted at maximum, the mucous membrane pale-yellow and intact. Uterus pretty large, especially the body; wall thick, the numerous bloodvessels following a serpentine course; collum long; orificium ext. with funnel-shaped red edges; orificium int. gone; cervical canal wide, its mucous membrane swelled, reddened, shows hæmorrhages, the tubes covered with numerous tough, and sometimes very thick pseudo-membranous formations, on its fine edges strongly dilated. Between the serpentine tubes, enveloped in pseudo-membranes, the enlarged ovaries are lying, containing numerous cysts. Adjacent to it a reddish grayish tough tissue, and here and there some tough black foci of the size of a pea. In the small intestines a dark-red, thick fluid mass; mucous membrane full of hæmatin and greatly swollen; mucous membrane of the colon very pale. Brain very hyperæmic with a flattened surface.

DIAGNOSIS.—Intoxicatio phosphorica.

- Gastro-enteritis hæmorrhagica.
- Induratio et hyperæmia lienalis.
- Nephritis parenchymatosa.
- Hæmorrhagiæ retroperitoneales.
- Hepar adiposum cum ictero.
- Hepatitis parenchymatosa lævis.

Myocarditis parenchymatosa.  
 Hyperæmia et œdema leve pulmonum.  
 Hæmorrhagia subpleuralis et mediastini antici.  
 Peritonitis circumscripta adhesiva.  
 Hydrops tubarum.  
 Oophoritis chronica cystica.  
 Hypertophia uteri.  
 Endometritis hæmorrhagica.

**MICROSCOPIC RECORD.**—*Examination of the Muscles of the Body:* Muscular fibres well preserved, with clear horizontal striation; others consist of conglomerations of fatty drops, but without pigment-molecules; they show a great tendency to deliquesce, and have not a trace of horizontal striation. No increase of nuclei. In other muscular fibres a beginning degeneration is found, whereby the fatty drops are put either in horizontal striation, or in other places in longitudinal striation of the fibrillæ; here also no increase of nuclei. In the interfibrillary connective tissue some very large drops of fat, but no increase of them. The muscles of the heart show excessive fatty degeneration, and are full of a large quantity of fine brown granules.

*Peripheric Nerves.*—The intermuscular nerves are in some places decidedly fatty-degenerated, and show perfectly the picture of degenerated nerve-fibres. Even the large nerves (medianus and radialis were examined) contain some fatty fibrillæ without increase of the nuclei. Bloodvessels everywhere in fatty degeneration, especially the capillaries of the peripheric nerves, the intermuscular bloodvessels, and those of the spinal cord.

In the *central nervous system* no alteration in the nerve-fibres, nor in the ganglia. Neither excessive granulation, nor pigmentation, nor proliferation of nuclei. The neuroglia also normal, and even after a painstaking examination no cells with fatty granules could be discovered.

In the *liver* the greater part of the cells is changed into large fatty drops, and even those remaining contain such in large quantity. The interstitial tissue normal. The *kidneys* show decidedly fatty degeneration; the single urinary caniculi full of large fatty drops, still some of them remain of normal structure. The *urine*

always gave an acid reaction, was dark-yellow, sp. gr. 1017, showed no reaction of biliary coloring-matter, and contained no albumen. Very little Indican; not a trace of sugar. The considerable sediment on the 13th-14th contained largely epithelium from the bladder, some red blood-corpuscles, and sparsely granulated, colorless, larger epithelioid cells with large nucleoli and drops of a yellowish color. At one spot there was a hyaline cylinder with numerous bile-tinged fat-drops, containing at one end a renal epithelial cell. Crystals were neither seen intra-vitam nor post-mortem.

According to Schultzen and Riess (*Annals of the Charité*, xv, 1), the quantity of urea falls considerably in the urine, as soon as decided general manifestations (icterus, enlargement of the liver, weakness in the action of the heart) appear in poisoning by Phosphor., and in its stead we find sarcolactic acid and peptons; in fatal cases the urea disappears nearly entirely. It may be, the same authors remark, that in poisoning by Phosphorus the uric acid is increased. The urine in one case was carefully examined, but the quantity of urea had not decreased, although that of the uric acid was increased. Not a trace of leucin or tyrosin could be found. A thorough examination of the liver showed it free from sugar.—*Zeitschr. f. Pract. Med.*, 41, 1875.

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If there is any truth in homœopathy, then Phosphorus must remove all curable conditions which it produces in persons of average good health, who took the drug for suicidal, or gave it to others for criminal, purposes. Let us compare the symptoms of these pathological states, as given by allopathic authorities with the pathogenesis as found in our *Materia Medica*.

*Gastro-enteritis Hæmorrhagia*.—Liman (*Gerichtliche Medizin*, ii, 507) says: In many cases, a short time after taking the poison, vomiting and eructations of masses, smelling like garlic, sets in with gastritic manifestations, and when the poison passed the pylorus with enteritic symptoms, followed in rare cases with death. In most cases we find *after the third day* icterus, sensitiveness of the epigastric region, hæmatemesis. Bock (*Diagnostic*, p. 362) gives for phlegmonous gastritis: severe steady pain in the epi-



gastric region, great anguish and even hiccough, painful eructations, vomituration and vomiting, bloatedness of the epigastrium, aggravated by pressure and by food and drink.

Hahnemann (*Chronic Diseases*, v, 61) gives us under Phosphorus the following symptoms hinting to gastro-enteritis: Pressure in the stomach after a meal; hiccough after a meal; oppression of the chest after a meal, with anxiety; tension and pressure in epigastrium with distension of the abdomen; constant eructations, with fermentation in the abdomen; eructations tasting of Phosphorus, with yawning, burning, and rawness of the throat; gulping up of bile; pains in the stomach, with nausea and vomiting; puffiness of the stomach and abdomen; violent burning heat in the stomach, sometimes issuing from the mouth like gas.

That Phosphorus not only causes hæmatemesis, but also cures it, Kafka (*Hom. Ther.*, i, 542) shows us. Thus he recommends it in capillary hæmorrhage from the stomach from venous stagnation, and as an analepticum to keep up the waning powers of life, when faintness and collapse threaten to extinguish it. Hughes (*Pharmacodynamics*, 2d ed., 442) certifies that Phosphorus controls the ulceration and hæmorrhage per rectum.

*Induratio et Hyperæmia Lienis.*—Bock (*l. c.*, 403) remarks that changes in the spleen mostly arise from hyperæmia in the spleen, produced either by mechanical causes, by morbid states of the portal vein, of the liver, heart, or lungs, or from a dyscrasia. We may then find a fixed local pain (from the serous covering) or a sensation of weight and pressure, frequent and intermittent chills, consensual gastric affections, etc. Niemeyer (*g. e.*, i, 800) considers such a hyperæmia caused by stasis, and the induration most probably a hæmorrhagic infarct, and in many cases of high-graded hyperæmia of the spleen, as in malarial infection, typhus, septicæmia, we may expect hæmorrhagic infarcts in the spleen. And per contra we find among the manifestations of Phosphorus (*Symptomædex*, ii, 492) violent pain in the left hypochondrium; he was not able to stoop or to lie on the right side; anxiousness below the left side of the chest, with bitter eructations; violent pinching in the left hypogastrium towards the epigastrium; afterwards sensation in that place as if something living were moving about there (the ductility of the splenic tissue explains such a sensation).

*Nephritis parenchymatosa*.—The three stages of Bright's disease, with their symptoms, are too well known to need repetition. Of the nine varieties of this disease given by Frerichs, Phosphor. finds only indication in the cachectic variety, in morbus Brightii potatorum, and in that caused by mechanical encroachment on the circulation from organic diseases of the heart, lungs, or blood-vessels. Buchner (*Morbus Brightii*, p. 66) cites Hahnemann's symptoms, 1009 to 1061, as hinting to a deep disturbance of the kidneys, with which the cardiac symptoms, 1270–78, stand in close connection. *Passive venous stagnation* is to him the great characteristic of Phosphorus, as thus its action on the brain, lungs, heart, liver, and kidneys, finds its most rational explanation.

*Hepar Adiposum c. Ictero; Hepatitis Parenchymatosa Lævis*.—Liman (*l. c.*, ii, 509) always found in toxæmic cases of Phosphorus the blood dark, tarry, no coagula or only soft ones in the heart, the hæmatics diffused in non-coagulated plasma. No wonder that such an abnormal quality of the blood causes hæmorrhagic effusions in the serous membranes (peri and endocardium, pleuræ, mediastinum, peritoneum), and in the subcutaneous fatty and cellular tissue of the walls of the thorax and abdomen, and of the lower extremities. The liver is enlarged, with obtuse edges, light-yellow, and when cut into doughy, soft, strongly coating the knife, anæmic. This acute fatty infiltration of the cells causes the enlargement of the liver, and by the rapid and sudden compression of the commencements of the biliary ducts, the biliary infiltration of the hepatic parenchyma as well as the general icterus. Many authorities (Lewin, Bamberger, Schultzen) could be cited to prove *Phosphor. passes directly into the blood*, acting perhaps analogous to a ferment; we differ here with Hughes (*Pharmacodynamics*, 448), and consider the hæmatic influence of Phosphorus its primary action. It certainly produces primarily venous stagnation, followed by dissolution of the blood-globules, and consecutively the affections on the circulatory organs (liver, spleen, and kidneys, the purifiers; the heart, the big engine of the circulation). Hering and others found Phosphorus beneficial in fungus hæmatodes, a variety of carcinoma, whose constitutional cachexia is more pronounced, and whose malignity is more early manifested than in any other form of cancer, and which rapidly destroys the sufferer

by repeated hæmorrhages. Yes, "small wounds bleed freely," because the coagulability of the blood is destroyed, and the consequent degenerations necessarily follow. Mering examined the urine for leucin and tyrosin in his case of Phosphor. poisoning, and found none, whereas either one is pathognomonic for hepatic diseases, and their presence in atrophy of the liver is as well marked as their absence in Phosphor. atrophy. Thiernesse and Casse experimented with Phosphorus at the veterinary school at Brussels (*Allg. Med. Centralz.*, 55, 1875), gave to their animals *Ol. phosph. per os*, or injected it into the veins, and as soon as symptoms of poisoning set in, made *injections of oxygen* in the veins, and witnessed the speedy disappearance of all symptoms of poisoning and an innocent combination of the oxygen with the Phosphorus in the blood followed. The oxygen must be pure and slowly injected into the veins. Repeated injections were several times necessary to remove the fatal action of the poison on the blood-corpuscles. Thus we see on the positive side that substances, like oxygen, changing venous into arterial blood, remove the symptoms produced by Phosphorus; the animals enjoyed their former health again, and the liver showed no symptoms of disease; the absence of leucin and tyrosin on the other side also prove that we have to look to the venous stagnation as the primary effect of Phosphor. poisoning.

But theorizing aside, how does Phosphorus act on the liver, and what does produce this fatty degeneration? Liman (*l. c.*, 511) remarks, that the pathologico-anatomical state of the liver in acute atrophy of the liver differs from that of Phosphor. poisoning. In the former the liver may also be chrome-yellow, but it has diminished in size; the acini are small, the cells are dissolved in a finely granulated detritus, and leucin and tyrosin are found in the urine in considerable quantity; in the latter we find the liver enlarged and infiltrated with bile, and an acute fatty infiltration of the cells. Niemeyer (*l. c.*, i, 736) differentiates the two forms of fatty liver; in the one, the surplus of fat from the blood of the portal vein is deposited in the hepatic cells, in the other, the hepatic cells, whose nutrition is disturbed by morbid processes in the hepatic parenchyma, pass into a retrograde metamorphosis,

into fatty degeneration. *Thus we have in the one case atrophy, in the other a fatty infiltration.*

This fatty infiltration of the liver, Niemeyer continues, has been frequently observed in phthisis pulmonalis, and Larrey, Budd, and Frerichs believe that it originates from the increased quantity of fat in the blood, in consequence of the emaciation and resorption of fat from other parts of the body. Its symptoms are: a sensation of fulness in the right hypochondrium, the liver can be felt elongated, and reaching far below its normal state, the fæces only slightly colored, varices on the capsule of the liver from compression of the bloodvessels, profuse diarrhœa, no swelling of the spleen nor any symptom of ascites. Per contra, we find in the pathogenesis of Phosphorus, sensitiveness of the region of the liver; when touching it, one experiences a dull pressure in it, especially when lying on the right side; stitches in the region of the liver from without inwards, with sensation as if she were held fast in that region; diarrhœa, acute and chronic, gray stools; protrusion of varices during stool, hæmorrhage from the anus and rectum, etc.

Let us return now for a few moments to Buchner, when he calls (*Morbus Brightii*, 65) Phosphorus the very antipode of the versatile Arsenicum; Arsenicum affecting the left heart, Phosphorus the right one, or in other words the former causes arterial stagnation, the latter venous stagnation, with or without disturbance of the lesser circulation.

*Myocarditis parenchymatosa*, a disease very difficult to diagnose during life. Bock (*l. c.*, 251) gives only the symptoms usual to carditis in general, and adds that the paralysis of the muscle causes *dilatation of the heart*, showing itself by considerable dulness on percussion, and by the absence of all manifestations of pericardial exudation. According to Piorry, myocarditis causes pain in the cardiac region, increased with every systole. The fatty degeneration of the heart is, according to Bamberger, a deposition of fatty granules in the primitive fibres, so that the whole muscular texture is lost, and the sarcolemma is filled up with closely standing fat-molecules. The heart thus becomes of a pale-yellow color, very friable, and can easily be torn. The extension of the fatty degeneration goes *pari passu* with the weakness of the heart.

In Mering's case as well as in others, described by different authorities, this fatty heart was clearly pronounced, and we all know that a weak heart and a dilated heart go hand in hand. If pathology gives us the symptoms: a tired sensation from the least bodily exercise—dyspnoea, anguish, and oppression from walking, palpitation, drawing and numbness in the left shoulder; we find corresponding to them under Phosphorus, weakness of the chest, palpitation of the heart, with anxiety, frequently only two or three beats, aggravated by motion and going off again when at rest.

*Hyperæmia et Œdema læve Pulmonum.*—The pathology of pneumonia is known well enough, but even in our school opinions differ about the stage when Phosphorus is indicated. Thus R. D. Hale (*Lectures on Acute Diseases of the Chest*, p. 54) considers this drug especially curative in the true croupous pneumonia, the more the inflammation involves the vesicular structure, and the more the sputa assume the plastic character; and, p. 47, he wishes us to bear in mind the occurrence of early prostration, and that the pathological condition does not improve in the same ratio as the constitutional symptoms, pointing to a morbid and morbid condition of the blood, which gives to pneumonic inflammation a character somewhat resembling essential fevers. With all due respect to Dr. Hale, we beg to differ with him, for Phosphorus does not produce a genuine inflammation; there is rather only a mere accumulation of blood in the veins, and extravasation of fluid blood in the tissues of the organs; we find it, therefore, not indicated in pneumonia crouposa, and we rather agree with Dr. Kafka (*l. c.*, vol. i, 204), who uses Phosphor. in the first stage of pneumonia crouposa, only when the inflammatory condition already lasted some time with considerable infiltration, when the fever becomes remittent, when the patient is pale, feels weak, and collapsed, when the sputa are tough and cannot be expectorated, when no symptoms of resolution will set in, when diarrhœa threatens to use up the last remnants of vital power—then Phosphor. becomes our great analepticum; and Chargé (*Maladies des Organes de la Respiration*, 250) considers it rightly the specific for typhoid, tuberculous, and hypostatic pneumonia. He also finds Phosphor. never indicated in the beginning of a croupous pneu-

monia, but only when hepatization, red or even gray, has taken place, especially on the left side.

In pulmonary phthisis, Phosphorus gives us the same or similar symptoms. Thus Chargé (*l. c.*, 314) cites: dry, hard, and tormenting cough, especially before midnight, and worse after rest; convulsive cough, with hardly any expectoration. When coughing, a sensation like an explosion in the head and a bruised feeling in the chest; cough till he vomits. Feeble voice, increasing to aphony in the evening; dyspnœa; short and rapid respiration. Cutting and lancinating pains over the chest, especially over the left chest. Mucus accumulates in the bronchi, expectoration bloody or blood-mixed, flocculent, yellow, purulent, of a salty taste, especially mornings and evenings, greatly weakening the patient. Chills even when well covered, interrupted by hot flashes; heat in the palms and soles, especially in the evening. Night-sweats, etc., etc.

If we ask, then, What is tuberculosis? the reply is, "An infiltration and condensation of the pulmonary tissue, compressing the air-vesicles, rendering oxidation at a low ebb, and thus producing again a venous stagnation." Kafka justly also considers Phosphor. the remedy for bronchopneumonia ab initio, where it loosens the phlegm, makes expectoration easy, and thus allows the oxygen again to penetrate into the very recesses of the air-vesicles, changing a poisoned blood into a healthy circulation.

*Hæmorrhagia Subpleuralis et Mediastini Antici.*—These as well as the retroperitoneal hæmorrhage can be easily explained by the fluidization of the blood. Liman (*l. c.*, 513) remarks, that the blood after Phosphor. poisoning does not look turbid, but transparent, as everywhere, where the coloring-matter is dissolved in the plasma, when death sets in a few hours after the poison was taken, but the fatty degeneration is only observed where some days have passed (from two to eight days), and he considers it a proof, where fatty degeneration is observed, that several days elapsed between the ingestion of the poison and death. Hence we may conclude that the fluidization of the blood is a primary effect of Phosphorus, and the fatty degeneration a consecutive one.

*Peritonitis Circumscripta Adhesiva.*—From the history of the case it seems that the inflammation was limited to the peritoneal

covering of the right lobe, where palpitation was painful, and she remained quietly on her back, as if every motion were painful. Kafka (*l. c.*, i, 734) remarks that persons suffering from tuberculosis, morbus Brightii, etc., frequently incline to peritonitis, and the symptoms: stitches in the hepatic region, from without inwards, and its sensitiveness to the touch, or the sensation as if the liver were held fast (adhesion) hint at least to a partial peritonitis.

*Hydrops Tubarum; Oophoritis Chronica Cystica; Hypertrophia Uteri; Endometritis Hæmorrhagia.*—We only see here a chronic diseased condition of the sexual organs; perhaps the hæmorrhagic effusion on the mucous membrane of the uterus might be laid to the Phosphorus, for we read: Discharge of blood from the uterus between the menstrual periods, after a suspension of eighteen months (in a female of 51 years), the menses (?) appear again for five days with violence, having a bad smell, bleeding of an ulcer, etc.

*Central Nervous System.*—In the case in question nothing abnormal was found. In Liman's cases only hyperæmia of the meninges and of the brain-mass. Thus we see that pathological anatomy fails to clear up the wealth of symptoms which Phosphorus shows us in its pathogenesis; but Hahnemann (*Chronic Diseases*, v, 43) gives us the keynote, "when the vital powers are weak and exhausted, or when the patient suffers with chronic diarrhœa;" and Noack and Trinks (*Symptom. Codex*, ii, 477) find Phosphorus indispensable in acute affections, in the course of which the cerebro-spinal system of nerves becomes very much depressed, and finally threatened with paralysis. Such dangerous conditions are frequently attendant on pleurisy, pneumonia, typhus abdominalis, acute exanthemata, and are, as by miracle, removed by the use of Phosphorus. All these diseases mentioned by Noack and Trinks produce venous stagnation or fluidization of the blood, hence the applicability of Phosphorus, or of its antidote, oxygen.

Hughes (*Pharmacodynamics*, 450) truly remarks, that "the temporary stimulation caused by small quantities of Phosphorus is never seen as a result of poisonous doses. On the contrary, even in acute cases, there are often symptoms of nervous depression, and where life has been prolonged, there has been progressive

palsy." (452): "The paralysis is of a functional nature, from debilitating causes, such as acute diseases, sexual excesses," etc. "When the cerebral hemispheres themselves are affected, it appears to have no influence." How then can we explain the axiom of Moleschott: "No thought without Phosphorus?" or that there is after some mental or intellectual duty more phosphoric acid than usual in the urine, because of the greater oxidation of phosphorus which has taken place in the brain (Draper, *Physiology*, 23)? And still it is said, there is no special connection between the intelligence and the amount of Phosphorus in the hemispheres. Would such exhausted brain-force be rejuvenated by one of our high potencies of Phosphorus? It may be, for we find such symptoms under it as, slowness of thought, emptiness of the mind; indisposed to work, the head feeling free; slight stupefaction and pain between the eyes, in the forehead, *going off after a meal*; headache when thinking; amelioration of the headaches after a meal and in the fresh air. Gallavardin's case (*Brit. Journal*, xx, Hughes, *l. c.*, 448) shows that Phosphor. produces a paralytic weakness of the back and extremities, and trembling at every effort, as if he was not sure of himself, painless fibrillary contractions, easily excited by contact, and per contra we find this muscular weakness removed by the same drug.

Phosphor. is a natural element of the human body, mostly occurring in combination—as in the neutral phosphate of sodium in the blood and saliva, the acid phosphates of the muscles and urine, the basic phosphates of calcium and magnesium in the bones and teeth—and therefore must also be a natural element of the food we partake of, in order to keep up the equilibrium. We find Phosphorus in the yolk and white of the egg, and in milk—the substances on which the young animal subsists during the period of its most rapid growth—it abounds in many animal substances used as food, in the seeds of many plants.

Schüssler, in his tissue remedies, gives us five combinations of Phosphorus for therapeutical purposes, and as inflammation is now considered a paresis of the vasomotor nerves, he finds his antiphlogistic in Ferrum phosphoricum; sepsis and nervous weakness are controlled by Kali phosphoricum; scrofulosis, or rather a failure in development, a remaining at a lower stage of human



growth, may be changed by *Calcarea phosphorica*. There are certainly thoughts for study in Schüssler's theory, although we may object to his generalizing method.

Oh that our allopathic friends, who daily witness the molecular action in nature, would also become convinced that "the mild power is great" in all our therapeutic actions! From allopathic sources we have shown the action of *Phosphorus* on different organs; from our own pathogenesis we show its curative action on the same organs. What more proof do they want in favor of *similia similibus curantur*, and of the high value of minimal doses?

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### ARTICLE XXIX.—Impotence and Sexual Irregularities in the Male.

BY F. F. DE DERKY, M.D., MOBILE, ALA.

THE male generative organs consist of the testes for the production of the semen, the seminal vesicles as reservoirs, the spermatic ducts, and the conduits of the sperm. The functions of these organs are frequently deranged and their healthy action interfered with.

Perhaps no other organ or set of organs is more abused, and of no other part of our body we know less, regarding their physiological action. Even their anatomy is as yet veiled in obscurity.

Impotence is, strictly speaking, but a symptom of various idiopathic diseases, and hence the difficulty to treat of it separately. The functional disorders of these organs appear as immoderately increased sexual instinct, priapism, satyriasis, nocturnal pollutions, spermatorrhœa, and impotence. They are affections caused by a sthenic or asthenic irritation and weakness in the generative organs, by a want of tone and strength in the general constitution, and an irritability and oversensitiveness in the nervous system.

Impotence is an inability for sexual copulation from a lack of virile power, with only feeble erections or a want of them. It should not be confounded with sterility, the latter implying an incapacity to impregnate the female ovum, which is the case only if the semen is unhealthy or deficient in spermatozoa. Both are

met with occasionally in the same individual, though impotence may exist without sterility and *vice versa*.

Absolute functional impotence is rarely met with, except in very old men and young children. Absolute organic impotence from absence or deficiency of some of the sexual organs, will not come under our consideration. We shall treat more especially of the temporary functional impotence as coming oftener under the observation of the physician, and being more amenable to medical treatment.

At the time of puberty, it frequently happens that the robust and full-blooded young man has, during the night, when asleep, an escape of semen, after which he feels relieved and easier. As long as these emissions do not occur too often, say only once a fortnight or once a week at most, they need not be considered as alarming, but should be looked upon as a natural overflow. They are brought on by dreams with erections of the penis, and the sensation of sexual intercourse, caused, may be, by too great a pressure of the sperm on the overfilled seminal vesicles. They are the more frequent if the young man is a generous feeder, a high liver, and of a robust constitution. They may take place from time to time even in middle-aged or elderly men who are or have been married and enjoyed sexual intercourse previously in moderation, but are too abstemious at present. These need not necessarily be made the object of medical treatment. If they occur every night or several times a night in the feeble and weak, with or without erections or dreams, produced by an enfeebled state of the generative organs, especially the seminal vesicles, a diseased state of the body, and a sickly mind dwelling on lascivious fancies, they are called nocturnal pollutions, and become the object of medical consideration.

Seminal emissions from a relaxed penis, without sensation or thrill, from insignificant causes, such as pressure at stool or urination, escaping with the urine or the last few drops of urine from the urethra, constitute spermatorrhœa.

Satyriasis is not a disease of the sexual organs alone, but depends on an affection of the brain, erotic delirium. It is a constant violent sexual desire, with erection. The patient seems to have lost all shame and decency.

Priapism, on the other hand, is a continuous more or less violent erection of the penis, with a total absence of sexual desire. In this condition there may be an irresistible rage for coition, and long-continued intercourse may take place to allay the erection. Cohabitation, though, generally takes place without pleasure or ejaculation of semen, and amorous desire is entirely wanting.

The consequences of too frequent pollutions and spermatorrhœa on the system, are most pernicious. Although they have undoubtedly been exaggerated by physicians, and still more so by the poor sufferer constantly on the watch for new symptoms, racked in his mind, may be, by the consciousness of former guilt. Still as their injuriousness can hardly be overestimated, they should be looked upon in their true value. Individuals who have practiced masturbation suffer most frequently from nocturnal pollutions and spermatorrhœa.

The effects of a long-continued too great loss of semen are a gradually increasing nervousness, with lassitude, weakness, trembling of the limbs, impotence, frequent palpitation of the heart, headache, confusion of thought, with inapplicability of the mind to serious work, hypochondriasis, and even dementia, epilepsy, etc., etc.

It has been denied of late years, by close investigators, that marasmus of the spine may develop itself after long-continued loss of semen; on the contrary this disease is considered to be the frequent cause of morbid sexual passions, and an impulse to onanism. Certainly those afflicted with tabes dorsalis are tormented with the most violent salacious and lascivious desires, though generally impotent and incapable to gratify the natural impulse. No sooner is sexual intercourse attempted, when the watery semen flows out of the immediately relaxing penis, which has hardly been introduced into the vagina. Many of these unfortunate sufferers are incapable to control their sickly impulse to onanism, so that even in their last remaining hours on their death-bed they still succumb to the vicious habit.

The pathological condition of spermatorrhœa is thought to be chronic inflammation and irritation of the seminal vesicle and the ejaculatory canals, as also an irritation of the lower portion of the spinal marrow. I say is thought to be, because some anatomo-

mists deny these conditions *in toto*, and will have found no traces of either by post-mortem examinations, and consider them only as etiological causes from rational induction.

What the pathological conditions of impotence may be, we are entirely ignorant of, as they depend mostly on the original disease.

The causes of spermatorrhœa are: masturbation; excessive sexual intercourse; repeated salacious fancies and lascivious thoughts, with excitation of the sexual organs; too great abstemiousness; diseases of the spinal marrow and cerebellum, as tabes dorsalis, etc.; diseased conditions of the anus, rectum, and intestinal canal, as constipation, piles, tumors, fistulæ ani, diarrhœa, intestinal worms, etc., etc.; overexertion of the mind, anxiety, trouble, grief, etc.; abuse of medicine and aphrodisiacs; abuse of alcoholic liquors, tobacco, coffee, tea, etc.; a hereditary condition, transmitted from parent to offspring.

Formerly gonorrhœa was always mentioned as one of the causes of spermatorrhœa. In fact the ancients thought that gonorrhœa, as the name implies, was a flux of semen. Since closer observations have been made, and since the microscope has been employed for the detection of the spermatozoa, it has been struck off the list. The most chronic cases of gonorrhœa have never been found complicated with spermatorrhœa. There may be many more causes of spermatorrhœa; they are, however, obscure and not sufficiently known.

The most prolific among the causes are, undoubtedly, masturbation, sexual excesses with women, and hereditary conditions.

Masturbation stands at the head as a mean, contemptible, degenerating vice, destroying both body and mind. Mostly practiced by the younger, it retards the general development of the body, undermines the mental capacity, and lowers the victim in his own estimation. The solitary vice frequently stamps the character of those addicted to it. The practical eye may read it on the face of the victim, and in his whole demeanor. It is not confined, however, to the younger only, it is practiced by men in all conditions of life and of all ages. In the young especially it favors and produces a local weakness in the sexual organs, and a paralytic-like condition in the seminal vesicles and their orifices.

Excessive sexual intercourse stimulates the secretion of semen, which being discharged again as soon as secreted, relaxes and weakens the whole body. Through the constant activity of the sexual organs, the seminal ducts, vesicles, and orifices of the same will lose their tone, an irritation and even chronic inflammation in these parts may be established, and thereby their elasticity and integrity destroyed and weakened.

An hereditary state of the brain and spinal marrow, however difficult to define and impossible to demonstrate, will hardly be denied. It has always been maintained by phrenologists that the amative and sexual powers are controlled and under the influence of the cerebellum; this has been denied by physiologists, and reasserted by the disciples of Gall. The matter is not settled yet. However, wasting of the testes, with a destruction of the sexual desire, and loss of the power of erection, may be caused by wounds and injuries to the head, as has been observed repeatedly. So also a blow on the head of a boy may destroy his intellect, produce, perchance, epilepsy, and cause him to masturbate by some unknown influence. Whether this influence arises from the cerebellum or cerebrum is equally unknown. It is frequently the case that those afflicted with spermatorrhœa suffered when young from enuresis. Inquiring into their history, we find that parents, grandparents, or some one in the family, had been suffering from one or other severe complaint of the nervous system.

In hereditary spermatorrhœa and impotence, Hahnemann's psora theory, or whatever you may call it, should not be lost sight of, as the two diseases will appear frequently on psoric soil. There is also a sycotic form of impotence, according to Grauvogl, with a diminution of the red corpuscles of the blood and an increase of the colorless.

Lewd dreams are not always a cause of pollutions, as they are sometimes, I might say, mostly occasioned by a plethoric state and great vigor in the sexual organs. When the dreams cease or are less pleasurable, the pollutions occurring almost without a sensation, coming from a relaxed penis, the case assumes a more dangerous aspect.

Diurnal pollutions and spermatorrhœa occur in various ways, rarely, however, with erections and pleasurable sensations. Most

frequently there is, during or after urination or defecation, the sensation of something passing along the urethra, which on examination appears like glutinous matter at its orifice. Sometimes the discharge takes place all at once, after urination or the movement of the bowels is completed, with a kind of a shock in the perineum and neck of the bladder, partial erection, and accompanied by some pleasurable sensation. The glutinous fluid detected at the mouth of the urethra contains not always spermatozoa, and then of course is not semen. Frequently it consists of the simple mucous discharge from the prostate and Cowper's glands. On this account a microscopic examination should never be dispensed with. No spermatorrhœa can be diagnosed as such without the aid of the microscope to detect the spermatozoa. The discharge of prostatic fluid and even chronic gonorrhœa has been mistaken for sperm.

In long-continued spermatorrhœa we find the zoosperm less developed, deformed, of an oval or round shape, with little or no tail, and not much motion, which soon ceases entirely. The sperm is thin and watery.

The suspected fluid is easily enough obtained. If the discharge takes place at once and with a shock, it is pretty sure to be semen; but it should be collected, and a drop of it be diluted with a little water for examination. If it takes place after urination and defecation, the patient should be instructed to take a drop of the last passing fluid, squeezing the penis gently from its root towards the end, and place it on a glass slide. It should be covered with a thin glass layer, and quite firmly pressed down to diminish the thickness of the fluid and spread it out. This preparation should be placed under a good microscope. If the liquid should evaporate, the reapplication of a part of a drop of tepid water will restore it.

Spermatorrhœa may produce symptoms similar to almost every disease of the human frame, and may lead the patient to fancy that he has heart disease, liver complaint, dyspepsia, and many other affections. This is caused by the most intimate connection that seems to exist between the sexual organs and the nervous system. What a remarkable influence the reproductive organs exercise over the body is seen by the imperfect development and

deterioration of the whole frame of those castrated. And again, if we consider that the most energetic and capable men of body or mind, are generally men of warm temperaments with strong sexual passions.

The moderate indulgence of the impulse of the sexual passions in a natural way is conducive to health and well-being of the whole system, as it also leads to a satisfactory feeling of vigor and strength. Hence it is that married life favors longevity.

Impotence is almost sure to follow a long-continued spermatorrhœa or loss of seminal fluid from any cause whatever. Though patients suffering from spermatorrhœa are not necessarily impotent, their sexual desire is, however, very much diminished. The secretion of the testes, the semen in a good and healthy condition, with an abundance of spermatozoa, and a certain accumulation of the same in the seminal vesicles, is necessary for the stimulation of the external organs to procure an erection. Whatever interferes with the healthy function of the testes, or destroys the vitality of the semen, is sure to produce impotence.

Permanent complete loss of virile power is very rare. There are always periods of great sexual excitement, with more or less erections and sexual desire, which are followed again by a temporary relaxation and want of erections, without desire, or violent sexual desire without capability to procure an erection sufficient for coitus. To enumerate all the various causes, conditions, and combinations of this symptom would lead too far, and is perhaps impossible in the present state of our knowledge.

The treatment of spermatorrhœa and impotence involves necessarily the treatment of the primary and idiopathic cause. If it can be reached, this symptom will disappear with the original disease. On the whole, the treatment is precarious and unsatisfactory. Much depends on the good judgment of the attending physician, and the confidence he is able to inspire his patient with, but *still* more on the selection of the appropriate remedy. There are many cases which will readily yield to its proper application.

The constitutional prophylactic, hygienic, and auxiliary treatment, should not be neglected. Gymnastics, general exercise, and active employment, and hard work, if it can be borne, are sometimes of very high importance. The gymnastics should be the

so-called medico-gymnastics, and ought to be carefully selected. Besides, the use of the lifting cure, as practiced on the reactionary lifter, is a valuable assistant, not only as a prophylactic but also as a means of cure. That also should be very carefully commenced, and judiciously proceeded with.

Mental occupation, even hard brain-work, of such a kind as will interest the patient, can be made to do great service in many cases, leading, as it were, the thoughts into a different channel.

The diet will have to be regulated; with some it may have to be restricted and cut short; stimulants, as wine or beer, coffee, tea, and tobacco, may have to be forbidden; with others, the use of wine and beer in small quantities may be invaluable. In nocturnal pollutions, the sleeping on a hard bed is recommended, and lying on the back should be avoided. Kafka recommends the tying of a cloth around the body, the hard knot on the back, if in his sleep the patient turns on it, the pressure of the uncomfortable knot will waken him.

In diurnal pollutions and spermatorrhœa it may be of service to let the patient urinate before the water presses very hard on the bladder; in other words, let him urinate often. To void the bladder previous to defecation has been advised, whether with much benefit is questionable.

The application of cold water, and its use as sitz- and general baths, sponging the whole body or the spinal column, are valuable auxiliaries. In general atony of the sexual organs, cold water may be employed as what might be called an ascending douche. The patient is made to sit over a jet of water. An ordinary syringe can be used for this by having a long nozzle adapted to it with a bend, so as to direct the stream upwards to the genitals, the perineum, and the lower part of the spinal column.

In impotence and deficient erections, some curious means have been employed to rectify the weakness, and occasionally with apparently good results. I will mention only flagellation or flogging, urtication, and firing. In local weakness of the parts, when the general health is good, they occasionally do some service. Although they have been employed mostly by worn-out debauchees, they should not be discarded and thrown overboard altogether as useless on that account.



The use of electricity in the treatment of diseases of the reproductive organs has produced some good results. The most benefit may be derived from it in atonic spermatorrhœa, deficient secretion of sperm where the nerves of the testicles are implicated, impotence from atony of the genital apparatus or from sexual hypochondria, anæsthesia of the nerves of sensation of the sexual organs, and in atonic paralytic states of the muscles assisting in erection, and those of ejaculation.

In atonic impotence and local weakness of the organs, faradization may be relied upon. One reaphor with a sponge, alternately to the small of the back, or in the centre over the os pubis, the other with the metallic brush to the perineum, on the inside of the thighs, or to the penis. Faradization may be used likewise in the atonic paralytic state of the muscles. In all the other above conditions, galvanic electricity will have to be employed, or at least will be of greater advantage, remembering always that electricity is an agent equally powerful for evil as for good. In sending a current through the testicles, particularly great care has to be exercised, as these bodies are very sensitive to galvanism, and much harm may be done by too strong a current. Duchenne de Boulogne was the first to apply galvanism in spermatorrhœa, on the recommendation of M. Lallemand. He introduced a urethral reaphor to the orifices of the seminal ducts, and the other conductor moistened to the perineum. He expresses himself very cautiously in regard to his success in the treatment of this disease.

Our main dependence is the proper homœopathic remedy. To facilitate its selection, the symptoms of the remedies that have been found curative are classified here under the following heads:

1. Sexual organs.
2. Penis.
3. Glans penis.
4. Prepuce.
5. Urethra.
6. Prostate.
7. Seminal vesicles.
8. Spermatic cords.
9. Testicles.
10. Scrotum.

11. Sexual desire, instinct, etc.
12. Sexual powers and passions.
13. Erections.
14. Coitus.
15. Symptoms after coitus.
16. Pollutions.
17. Spermatorrhœa.
18. Impotence.
19. Mental symptoms connected with sexual diseases and irregularities.

## SEXUAL ORGANS.

Sexual organs, bloated, relaxed, and sweaty, Cal. seg.

Sexual organs, burning in the, with excitation to discharge semen. Staun.

Sexual organs, cold and relaxed, Gels. s. v.

Sexual organs, cold and relaxed, almost insensible, no erection for many days, Diosc. vill.

Sexual organs, coldness of the, Agn. cast., Cann., Caps., Merc. v., Sulph.

Sexual organs, coldness, feeling of, and cold perspiration on the, Cal. seg.

Sexual organs, crawling in the, Acon.

Sexual organs, dropsical swelling of the, Lycop.

Sexual organs, extreme excitement of the, with stupor, Stram.

Sexual organs, falling off of the hair of the, Bell., Hell., Nat. c., Nat. m., Nit. ac., Phos. ac., Sinap., Selen., Zinc.

Sexual organs, inclination to touch the, Bufo.

Sexual organs, irritation, voluptuous, of the, Graph.

Sexual organs, itching and coldness of the, Iris. vers.

Sexual organs, itching and weakness of the, Sepia.

Sexual organs, itching of the, and the scrotum, excessive, extending to the anus, with profuse perspiration on the scrotum, evenings and nights, with a pollution, Magn. mur.

Sexual organs, itching of the, especially of the scrotum, Am. carb.

Sexual organs, itching of the, with a humid spot on the scrotum, Silic.

Sexual organs, itching of the, Agar. m., Ambra. gr., Amm. c., Calc. c., Cann., Canth., Carb. v., Con. m., Graph., Hep. s., Ign., Kali c., Lyc., Magn. m., Merc. v., Nat. m., Nit. ac., Nux. v., Puls., Sep., Sil., Sulph., Thuja occ.

Sexual organs, lancing and pressing pains in the, Bell.

Sexual organs, numbness in the, Baryta c.

Sexual organs, numbness in the, with violent erections in the mornings, without sexual desire, Ambr. gr.

Sexual organs, relaxation and weakness of the, Plumb.

Sexual organs, relaxed, with diminished or increased sexual desire, Acon.

Sexual organs, relaxed, with desire, Nux. mosch.

Sexual organs, relaxed, no inclination to coitus, Hell.

Sexual organs, sensation of weakness in the, with pressing-drawing in the testes and in the spermatic cord, as if it was drawing out, Mangan.

Sexual organs, sensation of unbearable voluptuousness in the, and in the whole body, even until discharge of semen, Stann.

Sexual organs, sensation voluptuous, lasting, violent in the internal, without irritation in the external, Ambr. gr.

Sexual organs, shrivelled, sexual desire wanting, Arg. nit.

Sexual organs smell strong and badly, Nat. m., Sarsap., Sulph.

Sexual organs, soreness between the genitals and thighs, Merc. viv.

Sexual organs, spots, yellowish-brown, on the, and abdomen, Cobaltum.

Sexual organs, stench intolerable about the, Sarsap.

Sexual organs, stitching and burning in the, Calc. c.

Sexual organs, sweat cold, and feeling of coldness of the, Cal. seg.

Sexual organs, sweat profuse on the, Cor. rub., Sepia.

Sexual organs, sweat profuse between the thighs, humid soreness between scrotum and thighs, Hep. s.

Sexual organs, scrotum, strong smelling on the, Dioscor. vill.

Sexual organs, sweat stinking on the, Sulph.

Sexual organs, sweat on the, at night, Bell.

Sexual organs, sweat on the, when walking, Merc. viv.

Sexual organs, sweat on the, profuse, smelling like honey, Thuja occ.

Sexual organs, sweat on the, and abdomen in sitting, Selen.

Sexual organs, weakness of the, coldness, Camph., Ign., Plumb.

Sexual organs weakness of the, with a bruised pain in the os sacrum, Oxal. ac.

Sexual organs, great weakness in the, and adjacent parts, with pain in the perineum on sitting, Lyc.

Sexual organs, great weakness in the, erections wanting or too feeble and too short, Nux mosch.

Sexual organs, great weakness in the, sensation of impotence, Mur. ac., Nat. mur.

Sexual system greatly depressed for weeks, with great elevation of the scrotum, Ustil. maid.

Excoriation between the thighs, especially when walking, Sulph.

Mons veneris, falling off of the hair of the, Bell., Hell., Nat. c., Nat. m., Nit. ac., Sarsap., Sel.

Mons veneris, itching of the, Agar., Carb. v., Kali c., Sulph.

Mons veneris, itching and moistening on the, Sulph.

Perineum, sweat on the, Con. m.

Perineum, pain in the, with great weakness of the generative organs and adjacent parts, Lyc.

#### PENIS.

Penis and scrotum shrivelled and drawn up, Carbur. sulph.

Penis becomes relaxed during coitus, Nux vom.

Penis, burning in the, frequent erections early in the mornings with, Magn. m.

Penis cold and relaxed, with impotence, Canth.

Penis discolored, bluish, and cold, the whole, the foreskin is drawn back, Sulph.

Penis excoriates easily during coitus and even from an erection, Anath. mur.

Penis, itching of the, Cann., Ign., Nit. ac., Oleum an.

Penis, jerking in the, almost like ejaculation of semen, Stann.

Penis, jerking in the, as if a nerve was stretched and snapped asunder, Thuja.

Penis, pain in the extremity of the, with severe lacerations in the testicles, Nuph. lut.

Penis relaxed, with great sexual excitement, Agar. musc.

Penis relaxed, with voluptuous fancies, Aur. met.

Penis relaxed, with sexual desire, or painful erections without sexual desire, Cal. seg.

Penis shrivelled, cold, and without erection. Impotence of several years' standing, Lycop.

Penis shrunk, and testicles cold, Aloes.

Penis, stinging in the, Merc. viv., Sulph., Thuja occ.

Penis, stitches, itching, cutting, and burning in the, Oleum an.

Penis, stitches in the, and prepuce, Puls.

Penis, swelling of the lymphatic vessels along the, Merc. v.

Penis, weakness of the, with imperfect erections, Merc. viv.

Glans penis and frænulum, syctic excrescences on the, horn-like, or wetting, oozing or itching, especially during new and increasing moon, Thuja occ.

Glans penis and prepuce, painful swelling and inflammation of the, Merc. v.

Glans penis, behind the corona humid soft excrescences, itching on being rubbed, Staph.

Glans penis, behind the corona increased secretion of smegma, Nux v.

Glans penis, behind the corona quantity of yellowish humor, Lycop.

Glans penis, burning stitches in the, burning pain, and soon afterwards urging to urinate, Stann.

Glans penis, burning jerkings in the, from the seminal vesicles, Mangan.

Glans penis, coldness and shrinking of the, Merc. viv.

Glans penis, dampness of the, Alum., China, Lyc., Merc. v., Nat. c., Nat. m., Nit. ac., Nux vom., Sep., Sulph., Thuj. occ.

Glans penis, dryness and redness of the, covered with small red dots, Cal. seg.

Glans penis, itching of the, Ars., Cann., Mangan., Merc. viv., Nux. v., Silic.

Glans penis, itching of the, with biting and burning, Nux vom.

Glans penis, sharp, shooting stitches through the, and in the end of the penis, Merc. prot.

Glans penis, tingling in the, Merc. viv. .

Glans penis, titillation and itching on the, Nat. mur.

Glans penis, voluptuous itching on the corona of the, Mangan.

Prepuce and glans, swelling, inflammation, and easy excoriation, Nat. carb.

Prepuce and scrotum, blisters on the, Graph.

Prepuce, dryness of the, Alum., Calad. seg., Ign., Mur. ac., Nat. c., Nux v., Sil.

Prepuce, herpes on the, Sarsap.

Prepuce, œdematous swelling of the, or blisters on it and the scrotum, Graph.

Prepuce is drawn back, Cal. seg., Ign., Nat. mur., Nux v., Prun. spin., Sulph.

Prepuce is drawn back, the penis is getting smaller, Prun. spin.

Prepuce is drawn back, the whole penis is discolored, bluish, and cold, Sulph.

Prepuce is thick and inflamed, Elaps. cor.

Prepuce itching, biting, or stitching on the inner and upper side of the, Pulsat.

Prepuce, itching of the internal surface of the, Lycop.

Prepuce, itching of the, Acon., Ars., Cann., Euphor. off., Lyc., Merc. v., Nit. ac., Nux v., Puls., Sil., Sep.

Prepuce, itching in the, Camph.

Prepuce itches voluptuously, Euphor. off.

Prepuce, on the edges of the, sycotic excrescences itching and burning, Psorinum.

Prepuce remains behind the glans after coition, painful and swollen, Cal. seg.

Prepuce, stinging in the, Arg., Merc. v., Puls.

Prepuce, stitches in the, Mangan, Puls.

Prepuce is swollen, the margin feels sore on touching it, Corall. rub.

Prepuce, the border of the, is swollen and sore, with smarting during micturition, Cal. seg.

Prepuce, tingling in the, Merc. v., Phos. ac.

Prepuce is ulcerating, and itches continually, Sep.

Urethra, burning in the, after coitus, Sulph. ac.

Urethra, crawling and tearing in the, after erections, Amb. gr.

Urethra, cutting in the, Nat. mur.

Urethra, cutting pain in the, during ejaculation of semen, Borax.

Urethra, discharge of mucus from the, Ferr. met.

Urethra feels as if stretched, Arg. n.

Urethra, fluid, sticky on the, after sensation as if a pollution should take place, without discharge of semen, Digit.

Urethra, pain in the, after copious pollution, Digit.

Urethra, sensation at the point of the, as if an acrid drop squeezed itself out, Selen.

Urethra, sensation as if a drop was running through the, Thuja occ.

Urethra, sensation of squeezing along the, a drop oozing out afterwards, Selen.

Urethra, sensation of stricture in the, as if the semen could not pass, with pollution, Thuja. occ.

Urethra, stitches in the, with urging to urinate, Thuja occ.

Urethra, smarting during urination, with swelling and soreness of the border of the foreskin, Cal. seg.

Prostate, burning in the, with frequent erections and gnawing pains in the testicles, Phos. ac.

Prostate, inflammation of the, Acon., Agn. c., Aur., Cann., Canth., Merc. v., Puls., Sulph., Thuja occ.

Prostate, pressing in the, Oleum an.

Discharge of prostatic fluid, Alum., Amm. c., Anac., Aur., Bell., Calc. c., Carb. v., Con. mac., Digit., Euphor. off., Hep. s., Ign., Lycop., Magn. c., Matico, Nat. c., Nat. m., Nit. ac., Nux m., Nux v., Phos., Phos. ac., Puls., Selen., Sep., Sil., Staph., Sulph., Thuja occ., Zincum.

Discharge of prostatic fluid, after titillation on the glans penis. Inflammation of the prostate, Puls.

Discharge of prostatic fluid, after urination and during hard and soft stool, Anac.

Discharge of prostatic fluid, after urination and stool, in long threads, or white like milk, Sulph.

Discharge of prostatic fluid, after urination, or with difficult stool, Nat. carb.

Discharge of prostatic fluid, caused by masturbation, by abuse of alcoholic liquors, coffee, sedentary habits, and mental exertion, *Nux vom.*

Discharge of prostatic fluid during every emotion. When pressing to stool, *Con. m.*

Discharge of prostatic fluid during hard stool, *Alum., Anacard., Phos.*

Discharge of prostatic fluid during stool, hard stool, urination, and at other times, *Hep. sulph.*

Discharge of prostatic fluid, early in the morning, *Thuja occ.*

Discharge of prostatic fluid from a relaxed penis, *Aur. met., Bell., Euphor. off.*

Discharge of prostatic fluid, like milk, after hard stool, *Amm. c.*

Discharge of prostatic fluid, profuse, with very excited sexual instinct, *Anacard.*

Discharge of prostatic fluid, profuse, during lascivious thoughts, from the slightest excitement, without erection, *Nat. mur.*

Discharge of prostatic fluid, profuse, without cause, *Zincum.*

Discharge of prostatic fluid, when pressing to stool, *Carb. veg., Con. m., Ign.*

Discharge of prostatic fluid, while passing wind, *Magn. carb.*

Discharge of prostatic fluid, while sitting still or on walking, with very disagreeable sensation, or before and after stool, *Selen.*

Discharge of prostatic fluid, with difficult stool, *Silic., Staph.*

Discharge of prostatic fluid, with great lewdness, without erection, *Lycop.*

Discharge of prostatic fluid, with slight voluptuous sensation and feeble erections, *Matico.*

Seminal vesicles, burning in the region of the, *Ambra gr.*

Seminal vesicles, irritability of the, *Gels.*

Seminal vesicles, itching irritation to void the semen, early, in bed, almost without erection, in the region of the, *Puls.*

Seminal vesicles, jerking from the, to the glans penis, *Mangan.*

Seminal vesicles, weakness of the, spermatorrhœa, *Bell.*

Spermatic cords, continual pain in the, running up, *Phytol. dec.*

Spermatic cords, contraction of the, *Alum., Nux v.*

Spermatic cords, drawing in the, *Agar., Agn. c., Mangan., Merc. v., Nit. ac., Nux v., Puls., Zincum.*



Spermatic cords, drawing, choking pains in the, also in relaxed testicles, mostly during and after erections, *Amn. carb.*

Spermatic cords, drawing pains in the, and testicles, *Psorinum.*

Spermatic cords, drawing tension in the, *Phos.*

Spermatic cords, drawing up the, and in the testicles, *Zincum.*

Spermatic cords, hardness of the, *Phos. ac.*

Spermatic cords, inflammation of the, *Nux v., Puls.*

Spermatic cords, itching of the, *Mangan.*

Spermatic cords, jerking of the, *Mang., Plumb.*

Spermatic cords, pressing-drawing in the, as if it was drawing out, with sensation of weakness in the generative organs, *Mangan.*

Spermatic cords, sensation of weakness in the, and testes, *Merc. viv.*

Spermatic cords, sensation of stitches and tension in the, and testicles, *Sulph.*

Spermatic cords, pressure in the, *Sulph.*

Spermatic cords, sensation of fulness in both, *Fluor. ac.*

Spermatic cords, sensation of strangling in the, *Nux v.*

Spermatic cords, stinging in the, *Nux v., Sulph., Thuja occ.*

Spermatic cords, stinging and spasmodic drawing, extending from the testicles, which are hard, hot, and swollen, *Nux v.*

Spermatic cords, swelling of the, *Cann., China., Kali c., Nit. ac. Phos., Phos. ac., Puls.*

Spermatic cords, swelling of the, and testes, *China., Kali carb.*

Spermatic cords swollen, with tensive pain, right testicle is drawn up and swollen, the left is hanging down, *Puls.*

Spermatic cords, tearing and drawing from the abdomen through the, to the testicles, *Puls.*

Spermatic cords, tearing in the, evenings, in bed, *Bell.*

Spermatic cords, tension in the, *Sulph.*

Spermatic cords, tension in the, drawing pain in the testes, with contractive pain and contraction in the scrotum, *Cann.*

Spermatic cords, tingling in the, *Merc. viv.*

Left spermatic cord, jerking-stitching pain in the, and left testicles, *Carbur. sulph.*

Right spermatic cord, contraction in the, with pain in the testicles, *Alum.*

## TESTICLES.

Testicles, atrophy of the, after masturbation, Puls.

Testicles cold and penis shrunk, Aloes.

Testicles cold to the touch in the night, without internal sense of coldness, with deficient erections, diminished sexual powers, Agn. c.

Testicles, constriction and tension in the, Plumbum.

Testicles, contraction of the, Alum, Merc. v., Nux v., Plumb.

Testicles, crawling in the, and scrotum. Pressure in the testicles, Carb. v.

Testicles, cutting in the, scrotum is swollen, Sep.

Testicles, drawing, choking pain in the relaxed, also in the spermatic cords, mostly during and after erections, Amm. c.

Testicles, drawing in the, Agar. m., Amm. c., Chinin., Merc. v., Nat. c., Nit. ac., Puls., Staph., Thuja occ. Zinc.

Testicles, drawing in the, and spermatic cords, with awkwardness, also evenings, with uneasiness and drowsiness, Agar. m.

Testicles, drawing in the, and up the spermatic cords, Zinc.

Testicles, drawing pain in the, with relaxed scrotum and swelling of the testes and spermatic cord, China.

Testicles, drawing pain in the, with contractive pain and contraction in the scrotum, tension in the spermatic cords, Cann.

Testicles, drawing pain in the, day and night, extending from the groins. Ham. virg.

Testicles, drawing pain in the, and spermatic cords, Psorinum.

Testicles drawn towards the abdomen, with stitches in them, Bell.

Testicles drawn up, one or the other, with some pain and swelling, Zinc.

Testicles drawn up painfully. Drawing pain in the right, Coloc.

Testicles drawn up painfully, Oleum an.

Testicles drawn up, with lascivious thoughts, frequent erections, Silic.

Testicles drawn up, Bell., Coloc., Nux v., Oleum an., Plumb., Puls., Sil., Thuja occ., Zinc.

Testicles, dwindling of the, Caps.

Testicles feel bruised, especially the left, Arg. met.

Testicles, gnawing in the, Phos. ac.

Testicles hanging down relaxed, Calc. c., China, Nit. ac., Puls.  
Sulph.

Testicles, hardness of the, Agn. c., Arg. m., Arg. n., Aur. met.,  
Baryt. m., Clemat. erecta, Con. m., Graph., Lyc., Merc. v., Nux  
v., Rhod., Sulph.

Testicles, heat and swelling in the, with hardness and being  
drawn up, stinging and spasmodic drawing, extending to the sper-  
matic cords, Nux vom.

Testicles, heaviness in the, Amm. c., Plumb., Oxalic ac.

Testicles, heaviness and drawing in the, they feel bruised, Nat. c.

Testicles, itching of the, Merc. v., Nux v.

Testicles, lacerations severe in the, with pains in the extremity  
of the penis, Nuph. lut.

Testicles, neuralgia of the, Ham. virg.

Testicles, pain in the, Acon., Alum., Amm. c., Camph., Con.  
m., Ham. virg., Nat. c., Phos., Phos. ac., Selen., Sep., Sil., Ustil.  
m., Zincum.

Testicles, pain in, as if bruised, Acon., Arg. m., Arg. n., Calc.  
c., Con. m., Dig., Kali c., Nat. c.

Testicles, pain in, with contraction of the right spermatic cord,  
Alum.

Testicles, pain, constant aching in the, for a number of days,  
Ustil. maid.

Testicles, pain, contractive, in the, Camphor.

Testicles, pain, severe neuralgic, in the, suddenly changing to  
the bowels and stomach, causing nausea and faintness, with great  
prostration of the animal passions, Ham. virg.

Testicles, pain, sharp, every five minutes, in the, producing  
faintness, Ustil. maid.

Testicles, pain, spells of violent pains in the, more in the right,  
Ustilag. maid.

Testicles painful, especially after erections, Con. m.

Testicles, pinching in the; drawing pain from the inguinal ring,  
Nat. m.

Testicles, pressing-drawing in the testes and spermatic cords,  
Merc. v.

Testicles, pressing-drawing in the testes and spermatic cords, as if it was drawing out, with sensation of weakness in the generative organs, Mang.

Testicles, pressure in the, Aur. met., Calc. c., Cann., Carb. v. Ign., Mang., Merc. v., Nat. c., Puls., Staph., Sulph.

Testicles, sensitiveness of the, Aur. met., Cann., Ign., Oxalic acid, Phos. ac., Sep., Zincum.

Testicles, stinging in the, Bell., Merc. v., Nux v., Staph., Sulph.

Testicles, stitches in the; they are drawn up towards the abdomen, Bell.

Testicles, stitches, pressing and tension in the, and spermatic cords, Sulph.

Testicles, strangling sensation in the, Amm. c., Ign., Nux v., Plumb.

Testicles, swelling of the, Agn. c., Arg. n., Aur. met., Baryt. m., Cann., Canth., China, Con. m., Dig., Elaps cor., Kali c., Lyc., Merc. v., Nat. c., Nit. ac., Nux v., Phos. ac., Plumb., Puls., Staph., Sulph., Zinc.

Testicles, swelling of the, after contusion, Con. m.

Testicles, swelling and great weight in the, with impotence, Plumb.

Testicles, swelling and hardening of the, also after suppressed gonorrhœa, Agn. c.

Testicles, swelling and inflammation of the, and scrotum, Puls.

Testicles, swelling and weight of the, Elaps cor.

Testicles, swelling, hard, of the, with shining redness Merc. v.

Testicles, swelling of the, and spermatic cords, drawing pain in testes, relaxed scrotum, China.

Testicles, swelling of the, and spermatic cords, Kali carb.

Testicles, swelling of first one then the other, with pain on touching, Oleum an.

Testicles, tearing in the, Euphorb. off., Puls., Staph.

Testicles, tension, tearing, and drawing from the abdomen through the spermatic cords to the, Puls.

Testicles very tender to the touch. Gnawing pains in them, with burning in the prostate and frequent erections, Phos. ac.

Left testicle drawn up, with swelling of the inguinal glands, sharp stitches in the, Thuja occ.

Left testicle especially, feels bruised, Arg. m.

Left testicle, jerking, stitching pain in the, and left spermatic cord, Carbur. sulph.

Left testicle, severe pain in, worse on exercise, Eryng. aquat.

Left testicle, swelling and induration of, and epididymis, Carbur. sulph.

Right testicle, digging pain in, when at rest; fears the part having been struck, Arg. met.

Right testicle, drawing pain in the, Oleum an., Coloc.

Right testicle drawn up and swollen, the left hanging down, the spermatic cord is swollen, with tensive pain, Puls.

Right testicle, enlargement and hardness of the, Arg. n.

Right testicle, itching pain in the, Selen.

Right testicle, severe pain in, better after passing urine, Cobaltum.

Right testicle, spells of violent pain, more in, Ustilago maid.

Right testicle, swelling of lower part of, Aur. met.

Scrotum and penis shrivelled and drawn up, Carbur. sulph.

Scrotum and prepuce, blisters on the, Graph.

Scrotum and testicles, crawling in the, Carbo v.

Scrotum, coldness of the, Caps., Merc. v.

Scrotum, constriction of the, Plumb.

Scrotum, contractive pain and contraction in the, with drawing pain in the testicles, Cann.

Scrotum, dampness of the, Carb. v., Silic., Sulph., Thuja occ.

Scrotum, fornication and itching on the, Phos. ac.

Scrotum, humid spot on the, with itching on the genitals, Silic.

Scrotum, itching of the, Alum., Amm. c., Acon., Anacard., Carb. v., Graph., Kali c., Lyc., Magn. m., Mangan., Nat. m., Nit. ac., Nux. v., Phos. ac., Prun. spin., Puls., Selen., Sil., Staph.

Scrotum, itching of the, better after scratching, Alum.

Scrotum, itching in the interior of the, which cannot be relieved by rubbing and pinching, Mangan.

Scrotum, itching much on and under the, Nat. mur.

Scrotum, itching near the, and dampness of the thigh, Carb. veg.

Scrotum, itching on the, extending to the anus, with profuse perspiration and pollution, evening and nights, Magn. mur.

Scrotum, itching, voluptuous, of the, causing sexual desire, Anacard.

Scrotum, itching, voluptuous, on the external, getting worse, changing into a sore pain and causing seminal emission from rubbing, Staph.

Scrotum, relaxation and flabby hanging down of the, and testicles, Sulph.

Scrotum, relaxation, great, of the, with sexual system greatly depressed for weeks, Ustilag. maid.

Scrotum, itching of the, Oleum an.

Scrotum, shrivelling up of the, Arg. nit., Caps., Zinc.

Scrotum, soreness and moistening between, and thighs, Baryt. c., Hep. s.

Scrotum, soreness between, and thighs, Aur., Baryt. c., China, Graph., Hep. s., Lyc., Merc. v., Nat. c., Nat. m., Nit. ac., Phos., Plumb., Sulph.

Scrotum, soreness of the skin on the, and thigh after perspiration, Plumb.

Scrotum, sweat between the thighs and, Hep. s.,

Scrotum, sweat on the, Amm. c., Bell., Baryt. c., Ham. v., Ign., Magn. m., Sep., Sil., Thuja o., Ustil. maidis.

Scrotum, sweat on the, at nights, Bell.

Scrotum, sweat on one side of the, Thuja occ.

Scrotum, sweat on the, profuse cold at night, Ham. virg.

Scrotum, sweat on the, profuse, cold, and greatly relaxed, Ustil. maid.

Scrotum, sweat on the, profuse, evenings and nights, with a pollution and itching, Magn. mur.

Scrotum, swelling, inflammatory, of the, Phos. ac.

Scrotum, swelling, inflammatory, of the, and testicles, Puls.

Scrotum, swelling of the, Phos. ac., Plumb., Puls., Sep.

Scrotum swollen, cutting in testicles, Sep.

Scrotum, tingling in the, Acon., Selen.

#### SEXUAL DESIRE.

Amorous paroxysms, Acon., Ant. c., Fluor. ac., Opium, Stramm.

Great desire to void semen, without erection, Sulph.

Great inclination to sexual intercourse, with nausea and vomiting after having satisfied it, Moschus.

Great sexual excitement, almost like satyriasis, with violent desire for coition, with painful lasting erections, Puls.

Great sexual excitement, with relaxed penis, Agar. m.

Irresistible inclination to seminal emission, with relaxed penis, Ignat.

Uncontrollable lewdness and amorous excitement, with frequent erections, pollutions, and amorous voluptuous dreams, Opium.

Sexual desire almost disappeared, Sulph.

Sexual desire and erections entirely wanting; impotence, or painful spasmodic erections at night, Nit. ac.

Sexual desire, painful spasmodic erections, want of, Carbur. sulph.

Sexual desire, painful spasmodic erections, want of, with coldness of the parts, Camph.

Sexual desire, painful fancies exalted, Graph.

Sexual desire, caused by voluptuous itching on the scrotum, Anacard.

Sexual desire, complete loss of, Coloc.

Sexual desire diminished, Acon., Baryt. c., Bell., Dioscoria vill., Fluor. ac., Hep. s., Kali brom., Magn. c., Op., Plumb., Selen.

Sexual desire diminished, or entirely absent, Diosc. vill., Hep. s.

Sexual desire diminished or increased, with relaxed parts, Acon.

Sexual desire diminished, the erection is slow and imperfect, the semen is discharged too soon, with a long thrill, Selen.

Sexual desire, diminution and absence of, with impotence, Kali brom.

Sexual desire, diminution of, in the morning after rising, with violent erections; at nights, preventing sleep, Aur. met.

Sexual desire diminished, with lascivious and amorous fancies, weakness of the parts, impotence, Ignat.

Sexual desire, excessive, uncontrollable, or impotence, Psorinum.

Sexual desire excessive, with constant erections at night, satyriasis, Kali brom.

Sexual desire excited, Acon., Agar., Agn. c., Alum., Amm. c., Anath. mur., Anacard., Ant. c., Aur. met., Calc. c., Cann., Carb. veg., China., Coff., Digit., Ferr. met., Fluor. ac., Graph., Ign.,

Kali c., Kali brom., Lyc., Merc. v., Mosch., Nat. c., Nat. m., Nux v., Opium, Phos., Plumb., Puls., Psorinum, Sarsap., Sep., Sil., Stann., Staph., Stram., Sulph., Zinc.

Sexual desire excited, also with erections, sometimes painful, Digit.

Sexual desire excited, very much the first days, day and night, with frequent erections, drawn up testicles, and lascivious thoughts, Silic.

Sexual desire excited, with salacious fancies, day and night. Frequent erections or impotence, China.

Sexual desire extinguished, indifference to voluptuous excitation, Bell.

Sexual desire increased, Acon., Aloes, Ant. c., Bell., Cann., Corn. circ., Fluor. ac., Lyc., Majoran., Nat. c., Plumb., Sep.

Sexual desire increased, during evening and at night, with diminished power, Corn. circ.

Sexual desire increased, in old men, violent erections all night, Fluor. ac.

Sexual desire increased, lewdness, Nat. carb.

Sexual desire increased, lewd thoughts, without erections, Sep.

Sexual desire increased or suppressed. Even exciting imaginations cause no erections, although there is sexual inclination, Lyc.

Sexual desire increased, with frequent erections, Cann.

Sexual desire increased, with restlessness, which does not allow him to sit long, Ant. cr.

Sexual desire increased, with sadness, Bell.

Sexual desire increased, with violent erections, Plumb.

Sexual desire increased, worse after walking, after eating, in the evening, Aloes.

Sexual desire, with relaxed penis, Cal. seg., Agar. musc.

Sexual desire, with relaxed parts, Nux mosch.

Sexual desire strong, with erections, Coloc.

Sexual desire, total absence of; voluptuous thoughts do not cause erections, Nuph lut.

Sexual desire, total absence of, or great exaltation, Anather. mur.

Sexual desire wanting, suppressed, Amm. c., Camph., Hell., Lyc., Phos. ac.



Sexual desire wanting, the genital organs have become shrivelled, Arg. n.

Sexual desire wanting, with increased erections at first, afterwards inclination to coition, without erection, or increased to powerful sexual inclination, Alum.

Sexual desire weak, almost extinct, Silic.

Sexual desire, with feeble erections, Agar., Amm. c., Graph., Selen.

Sexual excitation during the night; delirium, Stram.

Sexual inclination increased, especially mornings, Anacard.

Sexual inclination, complete want of, Ign.

Sexual instinct diminished, wanting, aversion to coitus, Lyc.

Sexual instinct diminished; impotence, Opium.

Sexual instinct exalted or deficient, Kali carb.

Sexual instinct, excessive irritability of, or impotence, Nat. mur.

Sexual instinct increased, Opium, Sulph.

Sexual instinct increased at first, afterwards lastingly wanting. Staph.

Sexual instinct, masturbation, irresistible tendency to, Ustilago maid.

Sexual instinct strong and easily excited, with painful erections, Nux vom.

Sexual instinct strangely excited, Moschus.

Sexual instinct very excited, with much discharge of prostatic fluid, Anacard.

Sexual instinct violent, with irresistible desire for coition, Phos.

Sexual powers diminished, Agn. c., Baryt. c., Cal. seg., Calc. c., Ignat., Nux mosch., Sep., Sil., Sulph.

Sexual powers diminished; during evening and at night sexual desire increased, Corn. circ.

Sexual powers feeble, with great inclination to sexual intercourse, Agar. mus.

Sexual powers, loss of, with absence of desire and erections; impotence, Chlor. hydr.

Sexual powers, weakness of the, Baryt. c., Cal. seg.

Sexual passions exalted by intrusion of ideas, Aloes.

Sexual passions, great prostration of the, with severe neuralgic

pain in the testicles, suddenly changing to the bowels and stomach, causing nausea and faintness, Ham. virg.

## ERECTIONS.

Erections, Agar. mus., Agn. c., Aloes, Alum., Amm. c., Anacard., Ant. c., Arg. n., Arn., Aur. met., Bufo, Cann., Canth., Carbur. sulph., China, Coloc., Digit., Diosc. vill., Eryng. aq., Euphorb. off., Ferr. met., Fluor. ac., Graph., Ign., Kali brom., Kal. carb., Magn. m., Merc. v., Mosch., Nat. c., Nit. ac., Nux v., Oleum an., Op., Phos., Phos. ac., Plumb., Puls., Sarsap., Sep., Sil., Stann., Thuja occ., Zincum.

Erections at first, afterwards want of them, Stann.

Erections at night, with emission, Carbur. sul., Oleum an.

Erections at night, with emission, with great lassitude and depression, Eryng. aq.

Erections at night, constant, with excessive sexual desire, Kali brom.

Erections, constant, violent, lasting, after coition, Sepia.

Erections continued without sexual desire, Bufo.

Erections deficient, Agn. c., Con. m., Graph., Hep. s., Kali c., Lyc., Magn. c., Nit. ac., Nux mosch.

Erections during stool, Ign.

Erections easily excited, Nux v., Phos.

Erections feeble, during coition painful, want of, Hep. s.

Erections feeble or wanting, Lyc.

Erections frequent, Alum., China.

Erections frequent, day and night, with constant excitement, Diosc. vill.

Erections frequent early in the mornings, with burning in the penis, Magn. m.

Erections frequent, pollutions and amorous voluptuous dreams, with uncontrollable lewdness and sexual excitement, Opium.

Erections frequent, sexual desire increased, Cann.

Erections frequent, with burning in the prostate and gnawing pain in the testicles, Phos. ac.

Erections frequent, with drawn up testicles and lascivious thoughts, sexual desire very much excited, day and night, Silic.

Erections imperfect, and premature ejection of semen, Cal. seg.

- Erections imperfect, with weakness of the penis, Merc. v.  
 Erections in the evening, Phos.  
 Erections, involuntary, during daytime, Anac.  
 Erections long-lasting, frequent, mornings or nights, Agar. m.  
 Erections long-lasting, without cause, Amm. c.  
 Erections, mornings, and after passing water, Aloë.  
 Erections, mornings only, when rising, Aur. met.  
 Erections, nightly, with and without pollutions, with and without dreams, Aur. met.  
 Erections painful, after copious painful pollution, Kali carb.  
 Erections painful, continuous, Nat. carb.  
 Erections painful, insufficient, Con. m., Hep. sulph.  
 Erections painful, lasting, great sexual excitement, almost like priapism, with strong inclination for coition, Puls.  
 Erections painful, nocturnal, or early in the morning, when asleep, Thuja occ.  
 Erections painful, nocturnal, with lascivious excitement, or also incomplete, with tension, seemingly caused by flatulence, Merc. viv.  
 Erection painful, sexual instinct strong and easily excited, Nux vom.  
 Erection painful, spasmodic, at night, or entire want of sexual desire and erections, impotence, Nit. ac.  
 Erections painful, without sexual desire, or sexual desire with relaxed penis, Cal. seg.  
 Erections powerful, sometimes with voluptuous rage, Agn. c.  
 Erections, priapism, Arg. n., Canth., Graph., Nat. m., Nux v., Puls., Sil.  
 Erections, priapism, with violent, insatiable rage for sexual intercourse, discharge of blood instead of semen, Canth.  
 Erections, priapism, with bleeding from the urethra, Arg. n.  
 Erections, satyriasis, Kali brom., Merc. viv., Nux v., Phos., Stram., Sulph., Majoran.  
 Erections, satyriasis, with cerebral excitement, flushed face, and glistening eyes, Phos.  
 Erections seem to be diminished, Sarsapar.  
 Erections slow and imperfect, diminished sexual desire, Selen.

Erections sometimes painful, also with excited sexual desire,  
Digit.

Erections too short during coitus, Calc. c.

Erections violent, Graph.

Erections violent, and pollutions, in feeble persons, Ferr. met.

Erections violent in the mornings, after rising, with exalted sexual desire; at nights preventing sleep, Aur. met.

Erections, violent, in old men, all night, increased sexual desire,  
Fluor. ac.

Erections, violent, long-lasting, especially at nights, with pressure in the abdomen, Zincum.

Erections, violent, spasmodic, Opium.

Erections, violent, with increased sexual desire, Plumb.

Erections wanting, too feeble and too short; great weakness in the sexual organs, Nux mosch.

Erections wanting, Kali carb., Magn. carb.

Erections, with amorous dreams and nocturnal emissions, Kali brom.

Erections, with amorous dreams all night, Dioscor. vill.

Erections, with desire to urinate, Mosch.

Erections, with strong sexual desire, Coloc.

Erections, with urging to stool, Thuja occ.

Erections, without sexual desire, Ambr. gr., Euphorb. off.,  
Phos. ac.

After erection, crawling and tearing in the urethra, Amb. gr.

During erection and coition, severe pressure in the perineum,  
Alum.

#### COITUS.

Coitus, aversion to, Agar. m., Agn. c., Cann., Kali c., Lyc.,  
Phos.

Coitus, aversion to, from abuse of sexual functions, Phos.

Coitus, great aversion to, or great inclination with feeble powers, or without a thrill, or delayed unsatisfactory discharge of semen,  
Agar. m.

Coitus, during, discharge of semen too early, Bor. ven., Cal. seg.

Coitus, during, discharge of semen too quickly, Cal. seg., Carb. v., Con., Lyc., Phos., Sel., Sulph., Zinc.

Coitus, during, discharge of semen too quick or too late, Lyc.

Coitus, during, discharge of semen too rapid, also with roaring in the head afterwards, Carb. veg.

Coitus, during, discharge of semen too soon, with but little thrill, afterwards tension in the abdomen, to the spermatic cords, Sep.

Coitus, during, discharge of semen too soon, with a long thrill; erection is slow and imperfect; diminished sexual desire, Selen.

Coitus, during, ejection of semen, cutting in the urethra, Bor. ven.

Coitus, during, erection too short, Calc. c.

Coitus, during, feeble erection, Hep. s., Sep.

Coitus, during, flatulent colic, Graph.

Coitus, during, goes to sleep without ejecting semen, Baryt. c., Lyc.

Coitus, during, great general excitement, Taxus bacc.

Coitus, during, instead of semen discharge of blood, Canth.

Coitus, during, painful cramps in the calves; no emission of semen, Graph.

Coitus, during, penis becomes relaxed, Nux v.

Coitus, during, semen is not discharged, Cal. seg., Kali brom., Kali c., Graph., Lyc.

Coitus, during, semen is not discharged; painful cramps in the calves, Graph.

Coitus, during, semen is not discharged at all or too soon, Cal. seg.

Coitus, during, semen passes too late, or too quick, or powerless, or without a thrill, Calc. c.

Coitus, great inclination to, with nausea and vomiting after having satisfied it, Mosch.

Coitus, inclination to, several days, with frequent seminal emissions, Sarsap.

Coitus, indifferent to, at first, afterwards voluptuous inclination, Borax.

Coitus, indifferent or aversion to, Agn. c.

Coitus, insatiable rage for; priapism with violent erections; discharge of blood instead of semen, Canth.

Coitus, lascivious dreams of, disturbed ; when awaking, erections and voluptuous thoughts, Silic.

Coitus, painful, urethra feels as if stretched, Arg. nit.

Coitus without a thrill or voluptuous sensation, Agar. mus., Anacard., Arg. nit., Cal. seg., Calc. c.

Coitus without discharge of semen, Cal. seg., Kali brom., Kali carb.

#### SYMPTOMS AFTER COITUS.

After coitus, anxious and restless all day, Sep.

After coitus, bruised feeling throughout the whole body, paralytic sensation in the right side of the head, Silic.

After coitus, burning in the urethra, Sulph. ac.

After coitus, burning in the orifices of the seminal canals in the urethra, during and after, Canth.

After coitus, burning pain in the back, in the morning, Magn. m.

After coitus, coldness of the legs, exhaustion, heat of the body and sweat all over, Graph.

After coitus, constant erections, violent, lasting, Sep.

After coitus, dulness of the head, Bar. c., Calc. c.

After coitus, immediately, general dry heat, with dislike to uncover, and dryness in the mouth, Nux v.

After coitus, great weakness and lassitude, with profuse night-sweats, occasionally with burning itching of the skin, Agar. mus.

After coitus, great weakness in the knees ; anxious and restless all day, Sep.

After coitus, ill-humor, irritability, Silic.

After coitus, lassitude, Con. mac.

After coitus, lassitude the whole following day, Lyc.

After coitus, nausea and vomiting, Mosch.

After coitus, oppression of the chest, Staph., Taxus bacc.

After coitus, palpitation of the heart and increased circulation, Amm. c.

After coitus, pain in the perineum, Alum.

After coitus, pollution, Nat. m., Kali carb.

After coitus, prepuce remains behind the glans, painful and swollen, Cal. s.

After coitus, roaring in the head, Carb. veg.

After coitus, stitches in the anus, Calc. c.

After coitus, sweat, Agar. mus., Nat. carb.

After coitus, trembling and great weakness in the legs, principally in the knees, also with nervous relaxation, discontent and irascibility, Calc. c.

After coitus, voluptuous dream and pollution or weakness of the body, particularly of the eyes, Kali c.

After coitus, weakness, Agar. mus., Calc. c., Con. m., Kali c., Lyc., Selen., Sep.

After coitus, weakness and great oppression of the chest, Taxus bacc.

#### POLLUTIONS.

Pollutions, Agn. c., Aloes, Alum., Amm. c., Anacard., Anath. mur., Ant. c., Arg. met., Arg. nit., Aur. met., Bar. c., Bar. mur., Bell., Borax, Calc. c., Canth., Carb. veg., Carbur. s., Con. m., Cor. r., Digit., Diosc. vill., Eryng. aq., Ferr. met., Gels., Graph., Ham., Iris vers., Kali brom., Kali c., Kobalt., Lyc., Magn. c., Magn. mur., Merc. v., Merc. prot., Mosch., Mur. ac., Nat. mur., Nit. ac., Nuph. lut., Nux v., Opium, Phos., Phos. ac., Plumb., Puls., Sarsap., Sep., Silic., Stann., Staph., Sulph., Taxus bacc., Thuja occ., Ustilago m., Zincum.

Pollutions almost every night, with lewd dreams, also painful, Sarsapar.

Pollutions; also after masturbation, Sep.

Pollutions; also without erections, Bell.

Pollutions after a coition, Kali c., Nat. m.

Pollutions and voluptuous dreams after coition, Kali c.

Pollutions and voluptuous dreams, with frequent erections, uncontrollable lewdness, and amorous excitement, Opium.

Pollutions as ill effects after masturbation, China, Nux v., Phos. ac., Puls., Sep.

Pollution, awakened by the sensation of a, then slight erection and discharge of a watery foaming fluid without odor, followed by a long, tensive, painful erection, Mur. ac.

Pollutions, copious, painful, with subsequent painful erection, Kal. c.

Pollutions early in the morning, with lewd dreams, and pain in the urethra, Cobaltum.

Pollutions, excessive and exhausting, Lyc.

Pollutions, inclination to, by leaning the back against something, Ant. cr.

Pollutions in the morning sleep, with lewd dreams, Plumb.

Pollutions in the after-dinner nap, Aloes, Alum., Corall. r., Staph., Sulph.

Pollutions, painful, with erections, Mosch.

Pollutions, sensation as if one should take place without discharge of semen, with a sticky fluid in the urethra, Digit.

Pollutions while pressing to stool, Phos. ac.

Pollutions, with dreams of coition; the semen is ejected very quickly, Borax.

Pollutions, with dryness of the whole body, Baryt. c.

Pollutions, with excessive itching on the genitals and scrotum, extending to the anus, with profuse perspiration on the scrotum, evenings and nights, Magn. mur.

Pollutions, with heavy dreams, Silic.

Pollutions, with lassitude afterwards, Baryt. c.

Pollutions, with relaxed penis, Bell., Cal. seg., Con., Mosch., Nux v., Selen.

Pollutions, with sensation of a stricture in the urethra, as if the semen could not pass, Thuja occ.

Pollutions, with sensation of biting on the glans, Nat. mur.

Pollutions, with voluptuous dreams, Alum., Ant. c., Arn., Aur. met., Baryt. carb., Borax, Calc. c., China, Kal. c., Nat. c., Nux v., Op., Phos., Plumb., Sep., Silic., Staph., Sulph.

Pollutions, without voluptuous dreams, Agar. m., Anacard., Ant. c., Arg. met., Bell., Calc. c., Guajac., Nat. c., Phos., Puls., Stann., Staph., Zincum.

Pollutions, very frequent, debilitating, Phos. ac.

Pollutions, frequent, Agn. c., Alum., Amm. c., Arg. met., Arg. n., Calc. c., Carb. veg., China, Con. m., Dig., Ferrum, Kal. c., Lyc., Mag. c., Nat. m., Nit. ac., Nux v., Op., Phos., Phos. ac., Plumb., Puls., Sarsap., Sep., Sil., Stann., Staph., Sulph.

Pollutions, frequent, copious, watery semen, with burning in the urethra, Sulph.

Pollutions, frequent, with inclination to coitus, several days, Sarsap.



Pollutions, frequent, with or without lascivious dreams, Arg. nit.

Pollutions, frequent, with voluptuous dreams every other night, in the after-dinner nap, Alum.

Pollutions, frequent, without lewd dreams, with great lassitude next day, Puls.

Pollutions, involuntary, during an after-dinner nap, towards morning, followed by sexual excitement, micturition, and stool, and restless sleep, Aloes.

Pollutions, involuntary, during sleep, at stool, and during urination, with impotence, Nuph. lut.

Pollutions, involuntary, from weakness of the sexual organs, with strong desire, Canth.

Pollutions, involuntary, without erections, Gels., Graph.

Pollutions, nocturnal, Anath. mur., Ant. c., Aur. met., Calc. c., Caps., Carbur. s., China, Cobalt., Coloc., Cor. r., Dioscor. vill., Eryng aq., Ferr. met., Ham., Iris vers., Kali brom., Magn. c., Merc. prot., Merc. v., Nuph. lut., Nux v., Oleum an., Op., Staph., Taxus bacc., Ustilago maid.

Pollutions, nocturnal, after onanism, very debilitating, China.

Pollutions, nocturnal, after dreams of urination, Merc. prot.

Pollutions, nocturnal, also with dreams, or without, Ant. cr.

Pollutions, nocturnal, and voluptuous fancies, Op.

Pollutions, nocturnal, caused by masturbation or abuse of alcoholic liquors, coffee, by sedentary habits, and mental exertion, Nux v.

Pollutions, nocturnal, copious, preceded by lascivious dreams, Merc. prot.

Pollutions, nocturnal, one to four every week, with sexual dreams, followed next by great prostration, dull pain in the lumbar region, with great despondency and irritability of the mind, Ustilago maid.

Pollutions, nocturnal, with amorous dreams, Iris vers.

Pollutions, nocturnal, with amorous dreams, followed by lassitude, gloomy depressed mind, and dull pain in the lumbar region, Ham. v.

Pollutions, nocturnal, with erection, Carbur. sulph., Oleum an.

Pollutions, nocturnal, with erections and amorous dreams, Diosc. vill., Kali brom.

Pollutions, nocturnal, with erections, and great lassitude and depression, Eryg. aq.

Pollutions, nocturnal, with erection, with and without dreams, Aur. met.

Pollutions, nocturnal, with lewd dreams, Staph.

Pollutions, nocturnal, with lewd dreams, waking him up from sleep, with headache, Cobaltum.

Pollutions, nocturnal, with violent erections in feeble persons, Ferrum met.

Pollutions, nocturnal, frequent, Calc. c.

Pollutions, nocturnal, frequent, almost every night, Magn. c.

Pollutions, nocturnal, in feeble, emaciated convalescents from typhoid fever, Nuph. l.

Pollutions, nocturnal, mixed with blood, Merc. viv.

Pollutions, nocturnal, without dreams and being unconscious of them, Anath. mur.

Pollutions, nocturnal, without dreams or erections, Cor. rub.

Pollutions, nocturnal, without erection, Cobaltum.

Pollutions, nocturnal, without erection or voluptuous sensation, several nights, Tax. ban.

Pollutions, nocturnal, without erection, sensation, or dreams, with great weakness of the knees, depression of spirits, Diosc. vill.

Emission of semen during sleep, Dioscor. vill.

Emission of semen, which he did not know until morning, Merc. prot.

Emission of semen, and irresistible tendency to masturbation, erotic fancies, melancholy, etc., Ustilago maid.

Semen escapes very easily, Con. mac.

After pollution, aggravation and renewal of complaints, Alum.

After pollution, burning in the urethra, Sep.

After pollution, chilliness of the whole body in the morning on rising, Merc. v.

After pollution, chilliness and weakness in the joints, Nat. mur.

After pollution, constipation, Thuja occ.

After pollution, dulness in the head, Calc. c., Silic.

After pollution, great heaviness and lassitude next day, Puls.

After pollution, great prostration, dull pain in the lumbar re-

gion, with great despondency and dulness of the mind next day, Ustilago maid.

After pollution, lassitude, Baryta c.

After pollution, lassitude and heaviness in the arms, Staph.

After pollution, nervous weakness in the thighs, Phos.

After pollution, nocturnal, frightened by slight noises, Aloes.

After pollution, nocturnal, much pressing to urinate, Merc. viv.

After pollution, painful spasmodic erection, lasting long, Nit. ac.

After pollution, weak and trembling, in the early morning, Lycop.

After pollution, weakness, China, Kal. c., Lyc., Nux v., Phos. ac., Sep.

After pollution, weakness of the eyes, Kal. carb.

After pollution, weakness of the lower limbs, or long-lasting coldness of the feet, Nux v.

After copious pollution, pain in the urethra, Digit.

After painful emissions, out of humor, vexatious, and dissatisfied, Nat. c.

After masturbation, atrophy of the testicles, Puls.

After masturbation, indifference, low spirits, and dulness of mind, Staph.

Bad effects from masturbation and sexual excesses, Acon., Ant. c., Arg. n., Cal. c., Carb. v., China, Cin., Cocc., Con. m., Merc. v., Nat. m., Nux mosch., Nux v., Phos., Phos. ac., Puls., Silic., Staph., Sulph.

#### IMPOTENCE.

Impotence, Agn. c., Ant. c., Bar. c., Cal. s., Calc. c., Camph., Cann., Canth., Caps., Carbur. s., China, Chloral hyd., Coloc., Con. m., Diosc. vill., Eryng. aq., Ergot. pur., Ferr. met., Graph., Helon. d., Ign., Kal. br., Kobalt., Lyc., Merc. v., Mosch., Mur. ac., Nat. m., Nit. ac., Nuph. l., Nux m., Nux v., Opium, Oxal. ac., Phos., Phos. ac., Phytol. d., Plumb., Sec. c., Sel., Sep., Sil., Stann., Stram., Sulph., Thuja occ.

Impotence after gonorrhœa, Thuja occ.

Impotence and nocturnal emissions, without erections, Kobaltum.

Impotence and spermatorrhœa, from abuse of sexual organs, Merc. v.

Impotence and spermatorrhœa, from abuse of sexual organs in weak people, Ferr. met.

Impotence and spermatorrhœa, nocturnal pollutions, discharge of prostatic fluid, caused by masturbation or abuse of alcoholic liquors, coffee, by sedentary habits, and mental exertion, Nux v.

Impotence and weakness of the parts, with lascivious and amorous fancies, sexual desire exalted, Ign.

Impotence at first, afterwards violent erections, Camph.

Impotence, caused by a cold, Mosch.

Impotence; complete loss of sexual desire for two months, Phytol. dec.

Impotence, complete or partial, Helon. dio.

Impotence, complete, with atrophied testicles, Carbur. s.

Impotence, complete, with swelling or great weight in the testicles, Plumb.

Impotence; entire want of sexual desire and erections, or painful spasmodic erections at night, Nit. ac.

Impotence, from abstemiousness, Con. m.

Impotence from abuse of the sexual functions; aversion to coitus, Phos.

Impotence from exhaustion, or abuse of the generative functions, Eup. purp.

Impotence; genitals cold, relaxed, almost insensible, no erection for many days, Dioscor. vill.

Impotence; insufficient painful erections, Con. m.

Impotence; loss of sexual powers, with absence of desire and erections, Chloral hyd.

Impotence of several years' standing; penis shrivelled, cold, and without erections, Lyc.

Impotence, or excessive irritability of the sexual instinct, Nat. mur.

Impotence, sensation of weakness in the sexual organs, Mur. ac.

Impotence, sexual desire almost disappeared; coldness of the parts, Sulph.

Impotence, total incapacity for coition, lewdness, lasciviousness, Stram.

Impotence, total, with retraction of the prepuce, sexual desire not extinct, Coloc.

Impotence, weak memory, after exhausting coition, *Sec. cor.*

Impotence, with cold and relaxed penis, *Canth.*

Impotence, with coldness of the scrotum, dwindling of the testes, nocturnal emissions, *Caps.*

Impotence, with complete paralysis of the sexual organs, absence of erections, watery or deficient semen, *Agn. c.*

Impotence, with diminished sexual instinct, *Opium.*

Impotence, with excessive excitability of the sexual organs; semen is discharged shortly after erection, or before erection is complete, *Phos. ac.*

Impotence, with excited lascivious fancy, *China.*

Impotence, with involuntary seminal losses during sleep, at stool, and during urination, *Nuph. lut.*

Impotence, with lascivious thoughts, *Selen.*

Impotence, with salacious fancies, *Cal. seg.*

Impotence, with weakness in the thighs, *Ign.*

Impotence, without sexual desire, *Kali brom., Stann.*

#### SPERMATORRHŒA.

Spermatorrhœa, *Bell., Canth., Coff., Ferr. met., Ferr. brom., Gels., Hyd. c., Iris vers., Merc. v., Nuph. l., Nux v., Oxalic ac., Phos. ac., Plumb., Selen., Stilling., Sulph., Ustil. maid., Zinc. ox.*

Spermatorrhœa and impotence from abuse of sexual organs, *Merc. v.*

Spermatorrhœa and impotence from abuse of sexual organs in weak people, *Ferr. met.*

Spermatorrhœa, and nocturnal emissions, *Stillingia.*

Spermatorrhœa, caused by masturbation or abuse of alcoholic liquors, coffee, sedentary habits, mental exertion, *Nux v.*

Spermatorrhœa, debility after, *Hydrast. can.*

Spermatorrhœa during stool, *Phos. ac.*

Spermatorrhœa, from a relaxed penis, after drinking wine, with lassitude next morning, violent painful erections from the least excitation, *Plumbum.*

Spermatorrhœa, from relaxation and weakness, irritability of seminal vesicles, *Gelsem.*

Spermatorrhœa, from weakness of the seminal vesicles, with

sweating of the sexual organs, and pressing and lancinating pains in the parts, Bell.

Spermatorrhœa; itching and coldness of the genitals; nocturnal emissions, with amorous dreams, Iris vers.

Spermatorrhœa, the semen escapes with every stool, and after urinating; dribbles away unperceived during sleep; is very thin and odorless; he is hopelessly distressed, Selen.

Spermatorrhœa, with erotic ideas and amorous dreams, Ustil. m.

Spermatorrhœa, great debility, anæmia, and depression of spirits, Ferr. brom.

Spermatorrhœa, with impotence and inability to retain the urine, Canth.

Spermatorrhœa, with painless morning diarrhœa, Nuph. lut.

Spermatorrhœa, with hypochondria, full of fears of the consequences; nervous system is shaken; restless, sleepless, and generally miserable, Zinc. ox.

#### MENTAL SYMPTOMS.

After coitus, anxious and restless all day, Sep.

After lascivious fancies, less sexual desire, Ant. cr.

Cerebral excitement, with flushed face and glistening eyes; satyriasis, Phos.

Delirium; sexual excitation during the night, Stram.

Depression of spirits, with spermatorrhœa, great debility, and anæmia, Ferr. brom.

Depression of spirits, great weakness of the knees after pollution, without erection, sensation, or dreams, Diosc. vill.

Discouraged and easily frightened in the evening; vertigo, Sep.

Dissatisfied and vexatious, out of humor after painful emission, Nat. carb.

During lascivious thoughts, without erection, profuse discharge of prostatic fluid, Nat. mur.

During mental derangement, sexual irritation, Stram.

Erotic ideas, fancies, and amorous dreams, with seminal emissions, and spermatorrhœa, Ustil. m.

Exciting imaginations even, cause no erection, although there is sexual inclination, Lyc.

Frequent lascivious fancies, day and night, *Digit.*

Gloomy and depressed mood, after emissions, with amorous dreams, *Ham. virg.*

Great despondency and irritability of mind, with great prostration and dull pain in the lumbar region, the day after an emission, with sexual dreams, *Ustil. m.*

Heaviness and ill-humor after emissions, *Thuja occ.*

Hopelessly distressed, semen escapes with every stool, and after urinating, *Selen.*

Hypochondriasis from denial of sexual intercourse, with single men, *Con. m.*

Ill-humor and dissatisfaction after intense sexual desire, without erection, *Calc. c.*

Ill-humor and irritability after coitus, *Sil.*

Indifference, low spirits, and dulness of mind, after onanism, *Staph.*

Indifference to voluptuous excitation, sexual desire extinguished, *Bell.*

Lascivious and amorous fancies, with exalted sexual desire, weakness of the parts, and impotence, *Ign.*

Lascivious and sexual fancies and dreams, *Kal. brom.*

Lascivious excitement, with painful nocturnal erections, with tension seemingly caused by flatulence, *Merc. v.*

Lascivious imaginations, without irritation of the sexual organs, *Ambr. gr.*

Lascivious thoughts, excessive crowding of, *Carb. veg.*

Lascivious thoughts, with impotence, *Selen.*

Lascivious thoughts, with sexual desire very much excited, day and night, with frequent erections and drawn-up testicles, *Silicea.*

Lascivious thoughts without erections, *Cal. seg., Sep.*

Lasciviousness, lewdness, *Stram.*

Mind dwells on sexual subjects, *Con. m., Staph.*

Nervous relaxation, discontent, and irascibility, with trembling and great weakness in the legs, principally in the knees *Calc. c.*

Sad, anxious, low-spirited, suppression of sexual desire, *Con. m.*

Sadness, with increased sexual desire, *Bell.*

Salacious fancies, with excited sexual desire, day and night, China.

Salacious fancies, with impotence, Cal. seg., China.

Stupor with extreme excitement of sexual parts, Stram.

Thoughts run on sexual subjects, tormenting him so that he fears insanity, Graph.

Voluptuous fancies and pollutions nightly, Opium,

Voluptuous fancies with relaxed penis, Aur. met.

Voluptuous thoughts do not cause erections, Nuph. lut.

Voluptuous thoughts and erection after waking from lascivious dreams of disturbed coition, Sil.

Weak memory after exhausting coition ; impotence, Sec. c.

This concludes the symptoms relating to sexual irregularities of those remedies that have been found most useful in practice. I have given also the mental symptoms, though coming under the head of concomitants.

## ARTICLE XXX.—Physiological Psychology.

BY C. G. RAUE, M.D.

(Continued from page 337.)

### § 92. DR. L. S. BEALE'S PROTOPLASM.

I HAVE had only lately the good fortune of becoming acquainted with the excellent writings of Dr. Lionel S. Beale through Dr. Drysdale's valuable work on *The Theory of Protoplasm*. There is at this moment, where materialism and spiritualism struggle for the palm of victory, scarcely anything more important and to the point than Beale's investigations, and Fletcher's theory as represented by Dr. Drysdale. As Dr. Beale's microscopical investigations have a close bearing upon physiological psychology, I shall now state in his own words what concerns us here. The results of his long and patient investigations on the nature of protoplasm are as follows:

1. "The term 'protoplasm' has been applied to several different kinds of matter, to substances differing from one another in essential particulars. To sum up in few words: The term



protoplasm has been applied to the viscid substance within the primordial utricle of the vegetable cell of the threads and filaments formed in this matter; to the primordial utricle itself; to this and the substance which it incloses, and to all these things, together with the cellular wall; to the matter composing the sarcode of the foraminifera; to that which constitutes the amœba, white blood-corpuscle, and other naked masses of living matter; to the matter between the so-called nucleus and muscular tissue, and to the contractile matter itself; to everything which exhibits contractility; to nerve-fibres, and to other structures possessing remarkable endowments; to the soft matter within an elementary part, as a cell of epithelium; to the hard external part of such a cell; to the entire epithelial cell; to slimy matter dredged from great depths under the sea; and, lastly, to matter existing only in the imagination.

“Inanimate albuminous matter which is incapable of any movement whatever, or which does not develop into any living thing, which in all conditions is perfectly lifeless, has been looked upon as protoplasm. Living things have been spoken of as masses of protoplasm; the same things dead have been said to be protoplasm. If the matter of an animal be boiled or roasted, it does not thereby lose its title to be called protoplasm; and there seems no reason why it should not be dissolved, and yet retain its name protoplasm.” (*Prot.*, p. 113.)

“In my lectures at the College of Physicians, 1861, I had drawn attention to the great distinction between ‘living’ and ‘formed matter’ of the elementary part or cell, and of all living organisms; and had shown that the ‘living matter’ of the cell corresponded to the material of which the amœba, white blood-corpuscle, pus-corpuscle, etc., were composed. These last I represented as naked masses of living matter, and objected to apply to them the term protoplasm, because so many textures, which were not living, were said to consist of that substance. My conclusions were summed up as follows: ‘In all living beings the matter upon which *existence* depends is the germinal matter (bioplasm), and in all living structures the germinal matter possesses the *same general character*, although its *powers and the results of its life* are so very different.’” (*Prot.*, p. 92.)

"The characters of bioplasm may be studied in the lowest organisms in existence, and in plants as well as in man and the higher animals. Being so very transparent, and often imbedded in dark and more or less opaque tissue, bioplasm has often been overlooked, and has been mistaken for mere passive fluid occupying a *space* or *vacuole* in the tissue. Bioplasm, or living matter, is, as far as can be ascertained by examination with the highest powers, perfectly structureless. It exhibits the same character at every period of existence, and in every living organism." (*Biopl.*, p. 47.)

"There is not one portion of a living growing tissue  $\frac{1}{8}$  of an inch in extent, in which living matter cannot be demonstrated." (*Prot.*, p. 42.)

"At every period of life, in every part of the body, separated from one another by a distance little more than the  $\frac{1}{1000}$  of an inch, are little masses of living matter." (*Prot.*, p. 304.)

"Man and animals, all their tissues and organs, their forms and structures, result from series of changes, which commence in a portion of matter too minute to be weighed, which is invariably perfectly colorless, and which appears perfectly structureless." (*Prot.*, p. 301.)

"The smallest masses of living matter are spherical, and the largest mass always assumes the spherical form when free to move in a fluid or semifluid medium." (*Microscope*, p. 312.)

"The particles of living matter consist of structureless, colorless, transparent semifluid matter." (*Biopl.*, p. 7.)

"In order to distinguish the invariably transparent living matter or bioplasm from the frequently transparent formed material, it is necessary to pursue a particular method of investigation, which I have fully described in my *How to Work with the Microscope*. The value of this process depends upon the fact that *all bioplasm is colored red by an ammoniacal solution of carmine, while all formed material, notwithstanding it has been traversed by the alkaline colored fluid, remains perfectly colorless*. The fluid which I use in the preparation of my specimens has the following composition: Carmine, 10 grains; strong liquor ammonia,  $\frac{1}{2}$  drachm; rectified spirits,  $\frac{1}{2}$  ounce; Price's glycerin, 2 ounces; distilled water, 2 ounces. *Every kind of living or*

*germinal matter or bioplasm receives and fixes the color of this fluid, while no kind of formed material known is stained under the same circumstances.*" (*Biopl.*, p. 44.)

2. "There is a period in the development of every tissue, and every living thing known to us, when there are actually no *structural* peculiarities whatever, when the whole organism consists of transparent, structureless, semifluid, living bioplasm, when it would not be possible to distinguish the growing moving matter which was to evolve the oak from that which was the germ of a vertebrate animal. Nor can any difference be discerned between the bioplasm matter of the lowest, simplest, epithelial scale of man's organism, and that from which the nerve-cells of his brain are to be evolved. Neither by studying bioplasm under the microscope, nor by any kind of physical or chemical investigation known, can we form any notion of the substance which is to be formed by the bioplasm, or what will be the ordinary results of its living." (*Biopl.*, p. 17.)

"One form of living matter is indistinguishable from another. Neither the most careful microscopical observation, nor the most skilful chemical analysis would enable us to distinguish the living matter obtained from the body of an ape from that taken from a man, dog, fish, or human form of life. But who will affirm that, therefore, all these different forms of living matter are one, identical? Although there may be no physical or chemical differences, we know that the life-history of these several forms is very different, while the results of their living are sufficient to prove that they must have been diverse from the very first." (*Prot.*, p. 284.)

"Two forms of living matter may be indistinguishable by observation or experiment, and yet they may be as widely removed from one another as are the poles. The remarkable differences, however, are not of a kind to be expressed in any terms known to physics or chemistry. They must be referred to powers that have been handed down by preceding bioplasm. Such differences are of the *vital* kind, and although not recognizable by the balance or the microscope, their existence must be admitted, unless all the subsequent structural differences resulting from

changes in the living matter can be otherwise adequately accounted for." (*Prot.*, p. 286.)

3. "The colorless structureless matter, characteristic of and peculiar to all life on earth, and in air, and in water, is capable of moving in every part and in every direction. The movements are not such as are produced by vibrations communicated to the fluid or semi-fluid substance from matter in vibration in its neighborhood, but the impulse proceeds from within the matter itself." (*Biopl.*, p. 7.)

"Biotoplasm always *tends to move* towards the pabulum it is about to take up and to transform. This *tendency* to move is one of the essential attributes of living matter. The movement is quite *per se*, but it is characteristic of every form of living matter. The idea that any form of non-living matter might move in this way or possess capacity for initiating such movements is opposed to observation and experiment, and cannot be entertained at this time." (*Prot.*, p. 271.)

"Living matter may by its *vital* movement transport itself long distances, and extend itself so as to get through pores, holes, and canals, too minute to be even seen with the aid of very high powers. There are creatures of exquisite tenuity which are capable of climbing through fluids, and probably the air itself, creatures which climb without muscles, nerves, or limbs, creatures with no mechanism, having no structure, capable, when suspended in the medium in which they live, of extending any one part of the pulpy matter of which they consist beyond another part, and of causing the next to follow, as if each part *willed* to move and did so." (*Prot.*, p. 276.)

4. "The character of living matter can be studied very readily in the amœba. These low forms of living beings are generally found in great numbers in water containing a little decomposing vegetable matter. If carefully examined under the one-twelfth of an inch object-glass, the amœba will be observed to alter in form. At various parts of the circumference protrusions will be observed. The protrusions consist of the material which forms the basis-substance of the amœba. It will be observed that this moving material is perfectly transparent, and in it no appearance of structure can be discovered. It is true that granules and foreign

particles may be seen imbedded in it, but the matter in which the motor power resides is perfectly clear and transparent. Motion is communicated to the solid particles by the movements of the transparent living matter. Under certain circumstances the movements cease, and a change is observed to take place upon the surface. The outer part of the amœba becomes condensed, and thus *formed material* results which protects the remains of the living within. The external surface of a mass or particle of living matter in contact with air or fluid becomes altered. In plain language, the living matter upon the surface dies, and according to the conditions under which death occurs, different substances may result. These may be solid, fluid, or gaseous. They may be soluble or insoluble in water. They may be soft or hard, colored or colorless. They are *formed*, and their *formation* is in great part due to the relation which the elements of the living matter were made to assume towards each other during the living state. This relation is definite, so that from the same kind of living matter under similar conditions the same formed substances result." (*Microscope*, p. 313.)

"The formed material may be regarded as a product resulting from the collision of internal *vital*, and external *physical* forces. It therefore owes its properties partly to the changes occurring in the matter when in the living state, partly to the external conditions present when the matter was undergoing change, that is, at the moment of its death." (*Microscope*, p. 323.)

5. "Nothing that lives is alive in every part." (*Prot.*, p. 187.)

"Of the matter which constitutes the bodies of man and animals in the fully formed condition, probably more than four-fifths are in the *formed* and non-living state." (*Prot.*, p. 187.)

"Even in the smallest organisms which exhibit the simplest characters, as well as in every texture of the most highly complex beings, we can demonstrate two kinds of matter, differing in very important particulars from one another; or perhaps it would be more correct to say, matter in two *different states*, manifesting *different properties*, and exhibiting differences in appearance, chemical composition, etc., and physical characters." (*Prot.*, p. 182.)

"Not even the smallest living particle seen under the one-fiftieth of an inch objective consists of matter in the same state in every

part, for it is composed of 1, living matter; 2, matter formed from this; and 3, pabulum which it takes up. The matter in the first state is alone concerned in *development, and the production of those materials which ultimately take the form of tissue, secretion, deposit, as the case may be.* It alone possesses the power of *growth, and of producing matter like itself out of materials differing from it materially in composition, properties, and powers.* I have, therefore, called it *germinal or living matter or bioplasm,* to distinguish it from the *formed material,* which is in all cases destitute of these properties." (*Prot.*, pp. 184, 185.)

"The difference between germinal or *living matter,* or bioplasm and the *pabulum* which nourishes it on the one hand, is, I believe, *absolute.* The pabulum does not shade by imperceptible gradations into living matter, and this latter into the formed material, but the passage from one state into the other is sudden and abrupt, although there may be much living matter mixed with little lifeless matter, or *vice versâ.* *The ultimate particles of matter pass from lifeless into the living state, and from the latter into the dead state suddenly.* Matter cannot be said to *half live or half die.* It is either *dead or living, animate or inanimate;* and formed matter has ceased to live." (*Prot.*, p. 185.)

"The terms *living* and *dead* have for me a meaning somewhat different from that commonly accepted. If my arguments are sound, the greater part of the body of an adult man or animal at any moment consists of matter, to all intents and purposes, as dead as it would be if the individual itself were deprived of life. The formed material of the living cell is dead. The only part of the living cell and the living organism which is alive is the germinal matter. Nothing can be regarded as alive or living but germinal matter in which vital changes alone take place. The phenomena of imbibition, osmose, etc., in cells, even the contraction of muscles and the action of nerves, are probably in themselves physical actions, although they were immediately preceded by, and are probably the direct consequence of actions purely vital. But for these vital phenomena those physical actions could never have occurred in the precise way in which they did occur, nor effect the purpose they did effect. Were it not for the vital actions, osmose, muscular contraction, nerve action, etc.,

would, of course, soon cease, and could not be resumed unless the conditions were all rearranged as they were before. The formed material in which all these changes occur could not have been formed without the previous manifestation of vital phenomena. We may go backwards as far as we can, but we shall always find vital actions concerned in bringing about the condition of things necessary for the peculiar physical and chemical changes which occur subsequently." (*Microscope*, p. 329.)

These extracts, which are taken *verbatim* from Dr. Lionel S. Beale's works (*How to Work with the Microscope*, fourth edition, London, 1868; *Bioplasm, an Introduction to the Study of Physiology and Medicine*, London, 1872; and *Protoplasm, or Matter and Life*, London, 1874), demonstrate:

1. What he understands by protoplasm, and what not;
2. That there are different kinds of protoplasm or living matter, although indistinguishable from one another by observation or experiment;
3. That one of the essential attributes of living matter is its tendency to move;
4. That living matter, under certain conditions, is converted into formed material; and
5. That the difference between *bioplasm* and *formed material* is absolute, the first being *alive* or *living*, the latter *dead*.

#### § 93. THE RESULTS OF MICROSCOPICAL AND PSYCHOLOGICAL INVESTIGATIONS COMPARED; LIVING AND DEAD.

These results, at which Dr. Beale has arrived by long and patient investigations, suggest themselves to a most careful consideration on our part. In the first place he has divested the term "protoplasm" of the ambiguity with which it has been used heretofore even by the most advanced histologists. By confining its meaning to that wonderful stuff which is without color and structure, and of a semifluid consistence, which exists everywhere where there is anything manifesting life, and without which not the lowest form of animal or vegetable nature has any existence, from which in fact man, animals, and vegetables, all their tissues and organs, their forms and structures, result through series of

changes; he has demonstrated a fact which is of the most fruitful application in physiology. That stuff, always derived from a preceding one of the same kind, is, in all living forms, the last and deepest point to which the microscope can penetrate, or, considering it in an opposite direction, the first or starting-point, the *punctum saliens*, which yet is demonstrable by the microscope, and from which the development of any living organism springs. Dr. Beale has, therefore, called it *germinal matter*, and we might well define it as that stuff which comprises within itself the *primary forces* of all *bodily* development. What, indeed, the *primary forces* of the soul are for all and every kind of psychical development, that is this germinal matter for all and every kind of *bodily* growth. To this point, as said before, the microscope reaches, but neither by the microscope, nor by the most subtle chemical means, are we capable of discerning any difference between the germinal matter of the lowest and the highest forms of organisms; and still differences, and even vast differences, must exist between them from the beginning, as the life-history of the various forms which result therefrom clearly demonstrates. "Such differences," Dr. Beale says, "are of the *vital* kind, not recognizable either by the balance or microscope." If it were not that we knew already different kinds of primary forces which are likewise beyond the reach of balance and microscope, we might well ask what was meant with differences of "a vital kind," and with those who do not see further than the microscope permits, and do not weigh sharper than the balance is capable of marking, this *vital* kind of differences has, indeed, been a great stumbling-block. It is, however, useless here to again refute those materialistic preconceptions which confound the knowable with the visible. The protoplasm, indeed, contains primary forces which lie absolutely out of the range of the microscope and chemical reagents, just as the primary forces of the soul lie beyond chemical analysis; and they resemble each other not only in this, but in still other particulars.

It is an essential attribute to living matter (protoplasm) that it has a *tendency to move*, that any part of this pulpy matter is capable of extending itself beyond another part, and of causing the rest to follow, as if each part *willed* to move and did so. We are well acquainted with this peculiarity as an innate quality, also



of all psychical primary forces, and we have called them, for this reason, *conative* in their nature (§ 24). They strive towards and are acted upon by external stimuli, and thereby become converted, changed, or modified, under certain conditions, either into notions, concepts, desires, etc., as the case may be. Just so the protoplasm moves towards and receives pabulum; under certain circumstances its movements cease, and a change is observed to take place upon its surface; this may result in the formation of different substances, which may be soft or hard, colored or colorless; they are *formed*, and this formed material may be regarded as a product resulting from the collision of internal *vital* and external physical forces. In short, the same fundamental process which has been described in § 4 we see here repeated, namely, the transformation of primary forces by external stimuli. As in the human soul sensations and perceptions (mental modifications) originate in consequence of impressions from the external world, so is in any kind of living being the protoplasm, which comprises within itself the primary forces of all bodily development, converted under certain conditions into formed material. And the relation between the protoplasm and this formed material is definite, so that from the same kind of matter, under similar conditions, the same formed substances result, just exactly as from psychical primary forces the same mental modifications result when they are influenced under similar conditions, as is shown by the different but definite products arising from a deficient, full, pleasurable, satiating, or painful stimulation. To sum up briefly: Soul and body consist, from the beginning of primary forces, which, although unrecognizable by balance or chemical means, are, nevertheless, essential to any psychical or bodily development. They are mobile elements, conative in their nature, and are converted by the action of suitable external stimuli ("under certain conditions," Beale), either on the one hand into mental modifications, or on the other hand into formed material.

Beale has described the conversion of living matter into formed material as taking place suddenly without any transitory states, and considers the difference between germinal matter and the formed material as absolute. Having called the germinal matter *living* matter, he considers the formed material to all intents and

purposes as *dead*. This antithesis, although seemingly correct in the sense in which Beale uses it, might nevertheless be better expressed by "*formative* and *formed*," terms likewise used by Dr. Beale. For "living" and "dead" are concepts by far not generally accepted in a uniform sense. And if we consider that formed matter, so long as it remains in union with, and under the influence of, "living" matter, which is the actual state of all living things, is not quite so "dead," as when this connection is entirely broken,—in order to express this still "deader" condition, we speak of decay and dissolution,—we cannot help thinking that the word "dead" applied to formed material is not altogether a fortunate choice. It is true, when living matter is converted into formed material, it loses the power of spontaneous movement and of assimilating pabulum, and changing it into matter like itself, but on the other hand it gains by acquiring a definite form upon which it imprints indelibly its own innermost nature, and which is quite essential to the "life" of the individual.

Is it well to compare this formative or organizing process with the process of "dying," a process which is always associated in the mind with the idea of disorganization and decay? Especially when we see that the formed material remains continually under the governing influence of living matter as long as there exists any connection between the two?

And if, according to Dr. Beale, "some directing agency of a kind peculiar to the living world exists in association with every particle of living matter, which, in some hitherto unexplained manner, affects temporarily its elements, and determines the precise changes which shall take place when the living matter again comes under the influence of certain external conditions" (*Prot.*, p. 314), it then appears that this "living" matter, as far as it is demonstrable, *itself* is dependent on something entirely different from itself, that not *it*, but the "peculiar kind of agency" with which it is associated, is the "living" force. And thus we have two different things to distinguish in every particle of "living" matter; first, what composes its invisible directing agency, and secondly, that visible, jelly-like substance with which the first is associated. With what right now is this stuff called "living" in preference to formed material? The one as the other is alike animated by

some invisible force. And why should formed material be called "dead," even if it were one remove further off from that "directing agency" than protoplasm matter, as long as it remains likewise under the influence of that power which animates the protoplasm?

But besides this there are other considerations which make one hesitate in the adoption of this sharply defined antithesis of living and dead, when applied to protoplasm and formed material. The question might be raised, Is there at all anything in God's world which could be called absolutely "dead," that is entirely destitute of force, entirely inactive, or is not all and everything that exists capable of action and reaction whenever brought under certain conditions? We shall, however, have to recur to this subject at some future occasion.

#### § 94. BEALE ON THE STRUCTURE AND ACTION OF THE NERVOUS APPARATUS.

1. "It was supposed that in many cases nerves pursued an almost direct course to their ultimate distribution, where they terminated in free extremities, in cells, or by becoming continuous with the texture they influenced. More careful observation has, however, demonstrated that all nerves before they reach their finest ramifications form microscopic networks or plexuses, are arranged upon the same plan as the coarser networks; and I have been able to demonstrate that the *finest ramifications* themselves constitute a *plexus or network, in which the compound ultimate fibres are arranged in much the same manner as the dark-bordered fibres entering in the formation of one of the ordinary plexuses.*" (*Microscope*, p. 331.)

"I am of opinion, therefore, that there is not such a thing as a true *end* of any nerve-fibre." (*Microscope*, p. 332.)

"I consider that numerous specimens I have made fully justify me in maintaining the general proposition that in all cases the terminal distribution of nerves is a plexus, network, or a loop, and hence that in connection with every terminal nervous apparatus, there must be at least two fibres, and *that in all cases there exist complete circuits, into the formation of which central nerve-cells, peripheral nerve-cells, and nerve-fibres enter.* All these elements are in structural connection with each other." (*Microscope*, p. 333.)

2. "My observations have led me to conclude, not only that nerves never terminate in ends in voluntary muscle, but that there are no terminal extremities or ends in any nerve-organ whatever." (*Biopl.*, p. 249.)

"Nerve-tufts (*Nervenbügel*) are not terminal organs but networks. The nerve-tuft consists of a complex network of fibres, the meshes of which are very small. Connected with the fine nerve-fibres are numerous masses of bioplasm or nuclei. The plexus or network constituting the nerve-tuft is not terminal, nor does it result from the branching of a single fibre, as has been represented. *Many fibres* enter into its formation; and from various parts of it long fine fibres pass off to be distributed upon the surface of the sarcolemma." (*Biopl.*, p. 267.)

"It seems to me most probable that these nerve-tufts are exceptional and not present in all muscles, nor essential to voluntary muscle generally. As in other tissues, the peripheral arrangement of the nerves in voluntary muscle is a continuous network, in which the nearest approach to an 'end' or 'termination' is a loop." (*Biopl.*, p. 268.)

"The remarks which I make with reference to the ultimate nerve-fibres distributed to voluntary muscle, will apply to the ultimate nerve-fibres distributed to other organs." (*Biopl.*, p. 274.)

3. "I will now refer very briefly to the arrangement of the nerve-tissue in that particular part of the gray matter of the convolutions, which I believe to be the seat of the operation of the mental influence. At the surface of the gray matter of the convolutions a most intricate interlacement of the finest nerve-fibres is observed. I have traced fibres to the surface, a short distance beneath the pia mater, and have seen them turn back again into the gray substance. In many instances, the long fibre that passes from the caudate cells may be followed to a point about the  $\frac{1}{2}$ <sup>1</sup>/<sub>10</sub>th of an inch below the surface, where it divides into numerous branches, many of which again divide and subdivide. In short, the ultimate ramifications of the long fibre running perpendicularly towards the surface, branch off at a right angle, or almost at a right angle, and radiate horizontally in every direction. They very soon, however, turn inwards again, and it is not possible to

follow the individual fibres. Now, the surface of the gray matter of the convolutions immediately under the pia mater, is almost destitute of bioplasts; but a little beneath this point, that is, in the situation exactly where the fine ramifications of the nerve-fibres are in greatest number, and are pursuing the most varied courses, are collections of roundish, very transparent, minute bioplasts, which are probably connected with one another by exceedingly delicate branches. These are in immense numbers, but form groups, though in the intervals between the groups the bioplasts are still numerous. The appearances and arrangement of the bioplasts, which are for the most part less than a white blood-corpuscle, are not unlike those observed in the so-called granules constituting the granular layer of the retina, and in the cortical substance of the cerebellum. These minute bioplasts have been termed 'granules,' but such a name seems to me particularly inappropriate. These so-called 'granules' are all composed of bioplasm, and are examples of highly endowed living matter. In all the organs in which they are found, they constitute an essential portion, and perform a very important office." (*Prot.*, p. 319.)

"I believe that the bioplasts referred to are directly concerned in mental action." (*Prot.*, p. 321.)

"The number of the nerve-fibres, like that of the bioplasts, is altogether beyond calculation. A portion of gray matter upon the surface of a convolution, not larger than the head of a very small pin, will contain portions of many thousands of nerve-fibres, the distal ramifications of which may be in very distant and different parts of the body. These nerves may, however, only indirectly influence distant parts through the intervention of other nerve-fibres, and some of them may be concerned in directing the associated movements of certain fibres of several different muscles."

4. "I believe the caudate nerve-cells, which form such prominent objects and which are very numerous in the gray matter of the brain of man and mammalian animals ought not to be regarded as the sources of mental nervous influence, although doubtless they are very intimately connected in, and, indeed, may be absolutely necessary to the act of thinking. These re-

markable bodies constitute an essential part of the apparatus which is influenced by the mental bioplasts." (*Prot.*, p. 321.)

5. "In the highest bioplasm the vital power determines movements, which, by reacting upon a previously formed mechanism, may give rise to the most complex phenomena. In the mental apparatus, the 'will' is the 'power' which determines the movements of the matter of the bioplasts taking part in the phenomena of the mind. This is a *vital* action, the highest *vital* action with which we are acquainted; but clearly to be included in the same category as the *vital* actions which determine the active movement of the matter of the simplest forms of bioplasm, as that of an amoeba, or a white blood-corpuscle, or other bioplast. The movement of this the highest form of bioplasm reacts upon a wonderfully elaborate apparatus, parts of which are in close relationship with the mental bioplasts. Changes excited in the apparatus are the immediate consequence of the vital movements. These last only are truly mental, while the expression of thought is but a result of the influence of the mental vital action upon the mechanism concerned in expression, without which thought could not be rendered evident to another person. A great distinction must, indeed, be drawn between the *thought* and the expression of the thought." (*Biopl.*, p. 208.)

"Perhaps the relation borne by the little bioplasts to the nerve mechanism may be roughly, but not inaptly, compared with that which subsists between the intelligent workman and the highly complex machinery which he directs and controls, stops and sets going. He would be useless without the machinery, but the latter could not work to any advantage except under the superintendence of an intelligent director." (*Prot.*, p. 322.)

6. "From the foregoing observations the reader will be led to conclude that I regard a nervous apparatus as consisting essentially of fine fibres and masses of bioplasm, which form uninterrupted circuits. The fibres are continuous with the bioplasts, of which some are central, some peripheral, and grow from them. By chemical changes in the matter formed by the bioplasts electrical currents may be produced, and these traverse the fibres. The currents varying in intensity according to the changes in the nerve-cells would be affected by pressure upon the nerve-cords

which transmit them. Currents emanating from bioplasts at one part of the circuit would influence the changes in the bioplasts in another part, and the last react upon the first." (*Biopl.*, p. 209.)

"Such investigations cannot fail to impress us with the wonderful character of the mechanism concerned in nervous phenomena, and lead us to conclude that the effects produced are to be attributed rather to the mechanism through which force works than to any mysterious or peculiar properties of the force itself. Let no one, therefore, conclude that anything is gained by regarding nerve-force as electricity, or some mysterious, unknown correlative of ordinary force, of the nature of which we know nothing. If we admit it to be ordinary electricity, the problem is not solved; for it is obvious that its manifestations are due entirely to the peculiar arrangement of the nerve-cells and fibres which constitute the mechanism for setting free and conducting the currents. It is not possible to conceive nerve phenomena without a special nervous apparatus, and it would be absurd to ignore this apparatus in considering the nature of nervous action. The action of the machine cannot be dissociated from its construction. But the construction of the apparatus and its maintenance in a state fit for action are due to vital power. The lowest, simplest, and least varied kinds of nervous action, like all other actions known in connection with the living elementary parts of living beings, are intimately connected with *vital* changes, and cannot be accounted for by physical and chemical laws only. When we assent to the consideration of the higher and more complex nervous actions, we find reasons for concluding that the vital actions perform a still more important part. In the brain of man we have probably the only example of a mechanism possessing within itself not only the means of repair, but the capacity for improvement, and the power of increasing the perfection of its mechanism, not only up to the time when the body arrives at maturity, but long after this, and even in advanced life, when many of the lower tissues have undergone serious deterioration, and have long passed the period of their highest functional activity." (*Microscope*, p. 338.)

These few excerpts may be considered as the results of Dr. Beale's researches, elaborately laid down in his exceedingly in-

structive works, regarding the action and structure of the nervous apparatus. Briefly stated they are as follows :

1. That in no case the nerves terminate in free extremities, but in all cases form plexuses or networks; that they thus form circuits, into the formation of which enter nerve-cells, peripheral nerve-cells, and nerve-fibres; that in fact the nervous apparatus consists essentially of fine fibres and masses of bioplasm, which form uninterrupted circuits. The fibres are continuous with the bioplasts, of which some are central, and some peripheral and grow from them.

2. That this applies to the nerves of the voluntary muscles as well as to those of all other organs, and that, therefore, the nerve-tufts are not terminal organs, but networks, so that in the peripheral arrangement of the nerves in the voluntary muscles as well as in all other tissues the nearest approach to an end or "termination" is a loop.

3. That in the gray matter of the brain the so-called "granules" are all composed of bioplasm, and are examples of highly endowed living matter which is directly concerned in mental action.

4. That the concrete nerve-cells ought not to be considered as the sources of mental influence, although they constitute an essential part of the apparatus which is influenced by the mental bioplasts.

5. That will and thought are truly mental vital action, while the expression of thought is but a result of the influence of this mental vital action upon the mechanism concerned in its expression; there is a great difference between *thought* and the *expression* of thought.

6. That by chemical changes in the matter formed by the highest bioplasts, electrical currents may be produced, and these traverse the fibres, but that there is nothing gained by regarding nerve-force as electricity, or some mysterious unknown correlative of ordinary force, as the construction of the apparatus and its maintenance in a state fit for action are due to vital power.

#### § 95. PSYCHOLOGICAL APPLICATION.

These results are the fruit of the most careful investigations, instituted and pursued by Dr. Beale for more than fifteen years.



They throw more light upon the structure and action of the nervous apparatus than the most diligent and minute physiological researches had thus far been able to do. In the brain, it was supposed, the nerves took somewhere their origin, and yet, on closer examination, they were found to split and split until their finest ramifications escaped all further tracing, while at the periphery the single fibres were thought to terminate in some way or another. Here and there divisions *ad infinitum*, an unintelligible wherefrom and whither. The fine "granules" at either end, although noticed and described, were looked upon as strange objects completely unexplainable as to their nature and functions. By Dr. Beale's discoveries these obscure and intricate points have been cleared up. He has demonstrated that the "granules" contain the very fountain of life, inasmuch as they comprise within themselves that "directing agency of a kind peculiar to the living world;" that they consist of microscopic bioplasts with which the nerve-fibres are continuous, and from which they grow; that the nerves do not terminate at the periphery, but form plexuses, and that thus the entire nervous apparatus must be considered as consisting essentially of fine fibres and masses of bioplasm which form uninterrupted circuits. He further places the caudate nerve-cells into their proper rank as stations of different nerve-fibres, and disowns them as sources of mental influence. As the only matter in the gray substance of the brain which is directly concerned in mental action, he considers the "granules," all of which are composed of bioplasm, and which are examples of highly endowed living matter; but thought and will are truly mental vital actions, while the expression of thought is but a result of the influence of this mental vital action upon the mechanism concerned in its expression.

In these results we find all that psychology as a natural science can ask from physiology. It is the same final conclusion at which we have arrived in the preceding paragraphs, that the brain is not the cause but only the condition of mental activities. Bioplasm comprises within itself that "directing agency of a kind peculiar to the living world," and the "granules" as highly endowed living matter, are associated with this agency which is directly concerned in mental action.

And here is the boundary where all physiological and microscopic-anatomical researches must necessarily come to an end. They have demonstrated the beautiful apparatus, the mechanism concerned in the *expression* of thought and will, but that agency which causes mental action escapes their grasp.

At this point we either must give up unravelling mental phenomena altogether, or enter upon their investigation by the only means which they afford,—consciousness in general and self-observation in particular. In the first three parts of this work we have shown to what results we thereby can attain, and in the following we shall still more enlarge our psychological knowledge upon the same basis of investigation.

To conclude this physiological part of our work, it remains yet to state what we, from our psychological standpoint, understand by “that directing agency of a kind peculiar to the living world,” with which all bioplasm is associated, and which in the “granules,” as highly endowed living matter, is directly concerned in mental action. And we state that this agency, which is associated with the protoplasm of the human body, and which lies beyond any demonstration of chemistry or microscopy, consists of the different *primary forces of the human soul* (§ 1); or, as we as well might put it, the human soul consists of the different primary forces which, being associated with corresponding protoplasm, are the cause either of the production of mental modifications in consequence of external stimuli (by the higher and lower senses), or of the production of bodily formations in consequence of pabulum (by the vital senses). All this will be made still more apparent as we proceed in our investigations.

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### ARTICLE XXXI.—Case of Extra-uterine Pregnancy.

(Read before the King's County Homœopathic Medical Society.)

BY M. A. TINKER, M.D., BROOKLYN, N. Y.

MRS. E., born May 24th, 1840, in Pennsylvania, with a nervo-sanguine temperament, blonde complexion, light-brown hair, and blue eyes; had good health in youth, and began to menstruate at

fourteen years of age; and continued to do so, without pain or inconvenience, until married.

She was married October 24th, 1859, and had a miscarriage between four and five months afterwards; flowing most profusely at that time. She rapidly recovered, and after three months menstruated again regularly, until about the 20th of December, 1869, when she became pregnant.

The latter part of February, 1870, she was threatened with miscarriage, accompanied with severe uterine pains and profuse hæmorrhage. This state of affairs continued for nearly three weeks, reducing her very low, and was characterized by the most intense expulsive pains, followed by and accompanied with prolonged fainting spells, lasting at times for hours, and no one who saw her thought it possible for her to recover. These symptoms were finally checked by electricity.

It was considered by all the physicians who saw this case as a miscarriage, both from the size and quantity of the clots passed, as well as the general subsidence of pains after this period. There had been considerable irritation of the stomach, which after this time was much less, although continued for a month or two longer. She gradually regained her usual health, so that in April she expressed herself as "never feeling better," although rapidly increasing in size, and very much annoyed by the excessive viability of the fœtus. At this time she resided in Elizabeth, N. J., but on the 1st of May, came to Brooklyn, N. Y. She was not sick an hour all summer. On the 10th of September, severe uterine or abdominal pains supervened, and a physician was called, who, after having made an examination, remarked that there was no particular indication requiring his immediate attention, gave an anodyne, and retired. After this she had more or less contractile pains, at times very severe.

On the 20th, the severer labor-like pains came on, increasing in intensity during the morning, afternoon, and evening, until they became almost unbearable, and yet not accomplishing anything, as remarked by the attending physician.

The pains continued until late in the afternoon of the 21st, when they began to abate, and by midnight had nearly subsided, and ceased entirely before morning.

On the morning of the 22d, a very peculiar discharge from the womb commenced, consisting of a fleshy substance and clots, like portions of a disorganized placenta. This continued quite profusely for a few days, when the discharge, gradually diminishing, became very offensive, and at length almost intolerable. The discharge continued for nearly three months, gradually diminishing.

The fetus from its first period of viability, which occurred about the fourth month of utero-gestation, to the 21st of September, was unusually active, presenting a characteristic width rather than prominence; so much so that it was thought there were twins.

After September 21st, there was no motion whatever. The milk fever occurred on the 25th, followed by almost abundant secretion, which required a long time to suppress. She remained very weak and exhausted for several months. There was no perceptible diminution in size, until February, 1871, when absorption gradually began to take place, and in the latter part of May, a portion of the fetus, probably an arm or leg, became very prominent in the left abdominal region, about four inches above and to the left of the umbilicus. It became so annoying that a consultation was held early in June. An examination of the uterus was made with the sound, and it was pronounced empty, and the prominence pronounced an encysted tumor.

There was no pain in the abdomen, neither had there been, since the 22d of September, 1870. At this time absorption had reduced the abdomen to about the size of a six or seven months pregnancy.

The menses had reappeared in May, and continued regular until February, 1873, a period of two and a half years. After missing for two months, she took some emmenagogue remedies, which induced an abundant flow, and for a few days it was accompanied with severe uterine pains; this subsided, and the flow, gradually diminishing, continued for a long time, she really thinking that she had a miscarriage at this time, it so resembled the former miscarriage. During the period that her menses were regular, from May, 1871, to February, 1873, she enjoyed her usual good health, and attended to her customary duties.

Early in May, 1873, the case came under my observation. I

found her keeping her room and bed most of the time, as she was very weak from the long-continued uterine discharge, above referred to. The discharge disappeared under treatment in about two weeks, while her strength only partially returned, with a very fair appetite. About two weeks after the uterine discharge ceased, a moderate diarrhoea supervened, which gradually increased, and became very peculiarly offensive; all symptoms aggravated quite regularly, about every four weeks, and then subsided during the interval. Her appetite was very fair, general health improved somewhat, and she became what one would call a very comfortably sick patient. When on her feet for some time, or walking any considerable distance, her feet and ankles became œdematous, as usual with pregnant women. After the middle of June, I saw her only occasionally, she being very comfortable, and residing at some distance.

On the 13th of July, 1873, on her visiting the stool, she found some large foreign body passing from her, per anum, which proved to be the left lower extremity of a full-grown fœtus, firmly adherent to its ossa innominata, by its ligaments; all the flesh was decomposed and gone from the ossa innominata, and from the knee downward, while from hip to the knee, the flesh and skin were *in situ*, presenting a section of the limb of a full-grown fœtus. Before my arrival several other portions had passed, but were not saved.

On making the examination per vaginam, found the parts healthy, the uterus present down and forward, somewhat with some anteversion, and not much larger than the virgin uterus, only tilted backwards, the os retaining its relative position and size, the bladder pressed forwards, and the head of a full-grown fœtus pressing upon it posteriorly, and resting upon the fundus of the uterus. On examination per anum, found a vertex presentation of the head, just above the recto-vaginal sulcus, and some five inches above the anus an opening into the abdominal cavity about three inches in diameter, through which portions of the fœtus could be distinctly felt, and the portions voided had passed.

No unusual symptoms occurred at this time, and the patient could walk about with very little inconvenience, the œdematous condition of the lower extremities producing the most unpleasant

symptoms she had. This development of the case at once revealed the cause of the intensely disagreeable diarrhoea, which had existed so long and resisted all attempts at treatment.

The case continued to aggravate every two to four weeks, when portions of the bones would be discharged. As the head slowly descended into the recto-vaginal sulcus, the œdema increased, as well as some dysuria and reflex action on the stomach, inducing vomiting, which continued to increase to the last.

The case progressed slowly, the head gradually coming down posteriorly to the uterus into the recto-vaginal sulcus, pressing upon the rectum, and filling the curve of the sacrum. At length very painful hæmorrhoids were developed, rendering an examination almost impossible.

About the middle of October, quite an amount of decomposed matter had collected below the head in the sulcus, and gradually ulcerated into the rectum near the anus, which opening continued to enlarge to the last. Through this opening the cranial bones could be distinctly felt, and were found overlapping each other, forming a firm cone. Most of the discharge, together with pieces of the fetal bones, passed through this opening.

About the middle of January, 1874, the cranial bones had become so separated that portions were passed, the sagittal edges of which aggravated the case very much.

On the 20th of January, a large number of pieces of cranial and other bones were removed with the assistance of a pair of bullet forceps.

Early in February, the entire occipital, one parietal, and several other pieces were removed in the same manner, and an unusually large amount of decomposed matter passed immediately afterwards, the patient expressing herself as greatly relieved, and on the following day passed urine easily, and retained food on the stomach, which she had not been able to do for a long time. Most of the bones within reach had now been removed, and her comfortable condition encouraged the hope of a favorable issue of the case.

After about one week the old symptoms gradually began to supervene. The urine became scanty, with dysuria; the œdema of the lower extremities and vomiting all returned, and in a few

days rapidly aggravated, while the remaining foetal portions did not settle down into the sulcus. (It was discovered at the post-mortem that they were held back by being under the ureters.)

On the 11th February, while on the stool and voiding a considerable quantity of decomposed matter, she exclaimed "that everything in her seemed settling down and about to pass," and immediately she fainted. I was present a few minutes afterwards.

After she rallied, I made a careful examination per anum, and found the remaining portions quite low, though not in the rectum, but mostly in the sulcus and back of the uterus. But no attempt could now be made to remove them, although she desired me to do so, hoping it would relieve her. As no urine had passed for the last twenty-four hours, the catheter was introduced, but the bladder was empty.

She gradually sank and died in about five hours, February 11th, 1874, at 9 P.M.

*Post-mortem.*—The post-mortem was held, February 12th, at 4 P.M. External appearances all natural, except the oedema of the lower extremities. On opening the abdomen, no watery accumulations were found. The intestines were lifted up and pressed backward towards the liver and stomach, and found firmly sealed in that position by false membrane, the abdominal walls in front; the uterus and bladder below forming the late foetal cavity, and were much discolored by the foetal decomposition which had taken place. No other membrane or traces of any could be found. The uterus and bladder, though pressed downwards and discolored externally, were healthy. The left ovary was involved in the general destruction, and only a short portion of the left Fallopian tube, about three-fourths of an inch long and one-third or so in diameter, remained. The right ovary was in normal position and natural in size, with a small cyst on its upper side, about three-fourths of an inch long, by about one-half an inch wide, and two others, about the size of peas on the lower side.

On examining the rectum, an opening, from two and a half to three inches in diameter, was found on the front side, about five inches above the anus, and another at its extreme lower part, somewhat larger. In examining for this lower opening, the remaining portions of the foetal bones, etc., were removed, forming

a mass about the size of a man's fist. The ureters were both bared, and were no doubt much influenced in their functions by the decomposing mass resting upon them, and probably prevented from passing down by being entangled in them. There was no appreciable disease in the kidneys, liver, spleen, pancreas, or other organs examined.

In reporting this case, I have endeavored to obtain as much information as possible concerning its history from first to last from the patient herself and friends, who were with her through most of this interesting period, and especially that portion of its history which transpired before the case came under my observation. All these statements were read to the patient, and corrected by her and her friends who were acquainted with the case.

There are very many minor details omitted, and perhaps some important ones, which I have not thought best to embody in this statement, lest it make it unnecessarily long. All which I most respectfully submit to the medical profession.

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[At the meeting of the American Institute of Homœopathy at Put-in-Bay, the Bureau of Materia Medica presented a proving of Sepia, and also a Report on Primary and Secondary Symptoms, their *nature and definition*, their *value as guides in the selection of remedies*, their *value as guides in determining the dose*. By the laws of the Institute, this Report is excluded from the *Transactions*. We publish, by consent of the authors, a portion of the report, comprising the paper on each of these topics.—ED. N. A. J.]

## ARTICLE XXXII.—Primary and Secondary Symptoms of Drugs Defined and Distinguished.

BY T. F. ALLEN, M.D., NEW YORK.

IN collecting data for the determination of the nature of primary and secondary symptoms, we have been obliged to select only such *provings* as exhibited the undisturbed action of a single dose of a drug, and to select such *symptoms* only, as could readily be perceived to have an opposite condition. The great majority of symptoms have apparently no opposite, and could be classed as belonging to a primary or secondary group or series, only by ob-



servicing their relation to other concomitant symptoms more certainly primary or secondary.

We thus feel obliged to refer to a series of symptoms, or to one symptom of a primary or secondary series.

Again, we find that after the reaction of the organism, secondary action, there is frequently observed another series, tertiary, which more or less closely resembles the primary, and again following this, a quaternary series more or less resembling the secondary, and indeed in some drugs (as, for example, Aconite) this action and reaction continues almost indefinitely. We shall, however, confine our present observations to the primary and secondary series.

I. *The primary effect of a large dose is opposed to the primary effect of a small dose.*

Rassbach and Frölich (*Verhandlungen der Physikal-medizinische Gesellschaft in Würzburg*, N. S., vol. v, pp. 1-79) find that  $\frac{1}{100000}$ th to  $\frac{1}{200000}$ th part of a grain of Atropia causes contraction of the pupil; but if the amount be increased to  $\frac{1}{80000}$ th of a grain, the pupil is first contracted, then dilated, and as the dose is increased, the primary contraction disappears. Excessively large doses cause partial contraction, or at least less dilatation than moderate doses.

Physostigmin in small doses also contracts the pupil, and this contraction is persistent even with moderately large doses, but excessively large doses cause dilatation.

Small doses of Aconite cause primarily an increase in frequency of the pulse, while large doses cause an immediate decrease.

Small doses of Atropin cause primarily a decrease in the frequency of the pulse, while large doses cause an immediate increase.

The more susceptible an individual is to the action of drugs the less likely is he to exhibit primary effects, and this leads me to my second law, viz.:

II. *The same dose will primarily produce opposite effects in different individuals; in the one less susceptible the action will be primary; in the one more susceptible the action will be secondary.*

Gerstel's wife (*Est. Zeitsch. f. Hom.*, 1, pt. 2, p. 40), took

3 drops of the tincture of Aconite, at 10 A.M., *in one hour*. Heat in the palms and face, with redness of both cheeks, etc.; *after a short midday nap*, she awoke with a very pale face, and icy-cold hands; about 5 P.M., coldness over the back and feet; at 7 P.M., face and hands again warm, and pulse 68.

*On the next day, in the evening*, at 10, she took another dose, and *on the following day at noon* there was a cold sensation of the hands and feet; and *in the afternoon*, heat of the head, cheeks, and hands; *after this*, several alternations of temperature.

Dr. Ernest Hottot (*Thesis on Aconitin*, presented for his degree in Paris, 1863), took  $\frac{1}{2}$  a milligramme of Aconitin (pulse 68); in thirty minutes, pulse 76; forty-five minutes, pulse 84; in one hour and thirty minutes, pulse 68; in two hours and thirty minutes, pulse 60; at six hours and a half, pulse 52; at ten hours and a half, pulse 60; at eleven hours and a half, pulse 68. (It is interesting to note in this connection that salivation was present in one hour and a half, and was very abundant after three hours and a half, and also, that when after six hours and a half, the pulse was down to 52, the pupils were dilated; a striking contrast to the action of Belladonna.)

M. Henrich (*vide Hottot, l. c.*), observed from 5 centigrammes of Aconitin at first, a rise of pulse, followed by a fall to 47.

It is well known that the first noticeable effect of large and toxic doses of Aconite is to produce a fall of the pulse, and great coldness of the surface, from which the individual may never react.

Holden's experiments with the fluid extract of Aconite (*The Sphygmograph*, p. 154), showed a very transient reduction in force and frequency of the pulse, followed in five minutes by a sudden increase of both, and in five minutes more, by a reduction, which progresses till the minimum of force and frequency is reached. In a second experiment (on himself), the first effect occurred in fourteen minutes, diminished frequency, and in three minutes more (seventeen minutes) a great increase of arterial tension; the maximum of excitement and increased tension occurred after thirty-five minutes, followed by reaction and minimum of frequency and tension, at fifty minutes. In a third experiment by the same author, the maximum occurs in thirty

minutes, the reaction or minimum of force, frequency, and tension, in forty minutes; while after eighty minutes, "*when the true physiological effects of the remedy were shown,*" A GREAT INCREASE OF FREQUENCY AND ARTERIAL TENSION, WITH CEREBRAL EXCITEMENT, WERE MANIFEST, followed, however, by reaction and variations, and until finally a long even wave of health was shown by the sphygmograph.

C. S. Fahenstack took one-tenth grain of Atropin (*Trans. N. Y. St. Hom. Med. Soc.*, 6, 88), and within an hour noticed a stoppage of the secretion of saliva, but on the second day he records "excessive secretion of saliva;" this prover experienced an immediate rise in the pulse, coincident (and harmonious) with the dry mouth. The next morning the pulse fell to a normal, but the dryness still persisted; had this proving been allowed to develop, the pulse would have fallen lower as the mouth moistened.

J. M. Smith (same reference as last), took one-fifth of a grain (the pulse being 78); in thirty minutes the pulse fell to 68; in forty-five minutes it rose to 130; and in twelve hours it had fallen to 60. This prover doubtless experienced the first stage of the Atropin proving; he states that after one hour the pupils had scarcely commenced to dilate; there was certainly a preliminary and unnoticed contraction; this prover gives the harmonious group of loss of motor power, "feels dull and not inclined to move about," with the dry throat, dilated pupils, and capillaries, with accelerated heart's action; a general motor (voluntary and involuntary) paralysis.

Dr. Mary D. Putnam (*The Med. Record*, 8, 249) administered to a delicate woman  $\frac{1}{80}$  of a grain of Atropiæ sulph., and noticed a fall of pulse in ten minutes from 96 to 80 where it remained at the end of an hour.

In another woman the same dose produced a fall of the pulse in seven minutes from 80 to 68, followed in fifteen minutes by a rise to 104.

In a third case, from hypodermic injection of  $\frac{1}{84}$  of a grain, the pulse fell in five minutes from 92 to 80; in ten minutes it rose to 100, and in twenty minutes, to 104.

In passing, we must note that this preliminary fall of pulse is

less noticed in animals or individuals with great cardiac susceptibility.

Meuriot (*Med. Times and Gazette*, 1872) noted from the injection of  $\frac{1}{100}$  grain, an increase of arterial tension (as recorded by the sphygmograph) in fifteen minutes, which continued to increase to thirty minutes, associated with increased rapidity of pulse; this increase of tension was still more marked from  $\frac{1}{8}$  of a grain. In these cases there occurred no initial diminution of pulse.

Dr. Parisel (*Thèse pour le Doctorat en Médecine*, Paris, 1868) made the following experiment: December 15th, 1867, at 8 o'clock A.M., we took three pills of the 0.10 of Picric acid, and half an hour later (?) more, of the same strength. The total amount of acid absorbed was thus 0.50. The resulting symptoms were as follows: Pulse, at time of taking, 71; half an hour after the second dose, roaring and humming in the ears, not very intense; sparks before the eyes; objects seem turning around; heaviness of the head, alternating with sensation of emptiness. At 9.15, rather scanty, oily, yellowish stool; the head symptoms abate; at 9.30, pulse 58; at 10, a second stool; pulse 55; at 10.30, pulse 52; at 10.45, a third stool, urine red; at 11, pulse 46, small and weak, hardly felt by the finger. Great weakness, obliging him to lie down. Felt as if he could scarcely move his limbs. No feeling of anxiety; perfect calmness. In the evening, no appetite; at 6 P.M., pulse 60, still weak; at 10, 65, and stronger; sweat. Slept quite soundly. Next morning, vivid redness of the sclerotica and skin; high-colored urine; pulse 75, and quite strong; still felt weak. Appetite returned, but still had to lie down after a short walk. In the evening and on the following day, nothing special was noted, excepting the altered color of the urine, which lasted six days, and that of the skin, which lasted eight days.

These experiments were repeated on a man who had panaris, and a woman with mammary abscess, both well on towards healing. The man took 0.50; the woman 0.40. Both presented the above-described symptoms, with very slight modifications. Thus, the man sweated only a little. The minimum rate of the pulse was 52; it started from 75. The discoloration of the skin only lasted seven days.

On the other hand, the woman sweated quite freely, and had

four stools; at the fourth "she felt weak," and had to be lifted into bed again. Her pulse fell from 70 to 50, and was very weak. The reaction raised her pulse to 80; the discoloration lasted nine days.

A very interesting observation concerning the course and direction of a pain, has been made in Prof. Hoppe's provings of Chamomilla by a Dr. H.

Two hours after taking 40 drops of the tincture, he experienced "stitches extending from the posterior portion of the hard palate, obliquely through the head to the top of the skull."

In a subsequent proving with 60 drops of the tincture, he experienced, *soon after the dose*, "dull stitches extending from the pharynx to the base of the skull," *but on the second day after this*, he experienced "stitches extending from the vertex down through the head to the pharynx."

In order to determine which of these symptoms was primary and which secondary, we must know that the previous provings of this man with the 12th, 6th, 3d, 2d, 1st, and small doses of the tincture, all produced pains beginning on the vertex and extending downward over the head, and also pains in the joints, extending downward into the bones *below* the joints, and only when he took 40 and 60 drops of the  $\theta$  did he experience these *upward* pains, followed after two days by the *characteristic*, PRIMARY, downward pains.

We have thus shown that moderate and large doses of a drug produce in any given individual two opposing sets of symptoms at different periods of their action. It is probable, but not easy to prove from any data that I have been enabled to obtain, that a very minute dose (one barely sufficient to produce an impression upon the system) is followed by a series of effects which subside, leaving the system in a perfect equilibrium, without any reaction-ary (secondary) symptoms.

Our propositions now follow clearly and naturally.

1. A primary symptom is one of a series first produced by the smallest possible quantity of any drug that will affect the organism.

2. A secondary symptom is one of a series opposite to a primary series, caused by a small or moderate dose, or

3. Since large doses (large relative to the susceptibility of the individual) do not at first produce primary but secondary symptoms, the primary effect of large doses is in reality a secondary effect of the drug, and the reaction following such doses exhibits in a crude manner *genuine primary* effects.

4. In any given individual, the smallest dose develops first primary symptoms; the largest dose develops first secondary symptoms.

5. In individuals of varying susceptibility, similar doses develop in the one of least susceptibility *first primary*, and in the one of greatest susceptibility *first secondary* symptoms.

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### ARTICLE XXXIII.—Primary and Secondary Symptoms of Drugs as Guides in Determining the Dose.

BY E. M. HALE, M.D., CHICAGO.

AT the last session of the Institute, I presented a study of *Cantharis*, and others of its analogues, as illustrative of this subject. This year I present a brief study of *Nux vomica* for the purpose of illustrating the relation of its primary and secondary symptoms to the dose in practice.

It appears to me that this subject is not to be illustrated by any theory, except it be deduced from the results of practice. The thousands of our school who have prescribed *Nux vomica* every day of their practice for years, are asked to examine the results of such practice; I also ask the members of the Institute to examine the records of the allopathic use of *Nux* and its alkaloid.

What are the *primary* symptoms and pathological effects of *Nux vomica*? Are they not familiar to every student of *Materia Medica*?

The most notable of its primary effects are *tetanic spasms*. These vary in intensity, from muscular contractions up to opisthotonos and general muscular rigidity. It is said that they depend upon a condition of the spinal cord defined as *congestion*, with *excessive exaltation* (irritation, hyperæsthesia) of the motor nerve-centres, or the reflex motor nerve-cells. So intense is this exci-

tation that the slightest mental or physical irritation brings on the terrible tetanic spasms. Hahnemann makes this *supersensitiveness* of Nux one of his most prominent indications for the homœopathic use of this remedy. These two conditions above named are in reality the keynotes of the primary action of the drug. They control all the nervous symptoms of Nux vomica, and it must be especially noted that all the most rigid believers in the high and highest potencies prescribe Nux for this characteristic indication. In this they are right, for none but the most attenuated doses can be used with safety when this indication is present.

I claim that this one fact proves that, for *primary symptoms*, the smallest possible dose is best indicated.

Who would dare to give Nux in doses of the crude drug, or even the attenuation below the 3<sup>r</sup>, in cases of tetanic spasm depending on spinal congestion? Who would select appreciable doses of Nux for angina pectoris, cardialgia, or other tetanoid affections of the viscera?

What dose would be safe in cerebro-spinal meningitis, myelitis, or other congestive and inflammatory affections of the cord?

In looking over the reported cases of cures by means of Nux, I find that the most brilliant cures were made with the high potencies when they were primarily indicated.

What are the secondary symptoms of Nux and Strychnia?

A careful study of its toxic effects, as given by the best authorities, shows that from its continued use in poisonous quantities, in men and animals, conditions just the opposite of its primary toxic effects finally obtain. The spinal congestion becomes passive, or results in softening or extravasation, as an ultimate primary effect. But oftener the *irritability of the motor nerve-centres becomes exhausted, spinal exhaustion, or paresis* occurs; and thence the various forms of *paralysis*. This paralysis has been closely and accurately studied, and is said to be almost wholly confined to the *afferent nerves, i. e.*, the nerve-centres do not respond to peripheral irritations, nor do the reflex motor nerves perform their proper functions. The natural stimulants of the various organs of nutrition and assimilation no longer excite the reflex irritations which are necessary to carry on the normal functions of life.

I need not enumerate the symptoms evolved by these pathological states. Knowing what these states are, any physician can arrange them into primary and secondary groups. The question now arises, What is the proper dose to be prescribed for these secondary conditions?

The history of the treatment of paralysis with *Nux* and *Strychnia* is the best answer to this question. I can find no record of cases of paralysis cured by the middle or higher potencies of this remedy.

Homœopathic literature is quite barren of cures of paralysis, especially the more serious forms. *Nux* is especially adapted to paralysis, but the paraplegia must be reflex or secondary. The fact that it is absolutely necessary to use appreciable doses of *Strychnia* for the cure of the various forms of paralysis is ample proof of the law of dose, which assumes that for *secondary symptoms appreciable quantities must be prescribed*. A spasm of the sphincter vesicæ may disappear under the use of *Nux* 30, but a paralysis of the same sphincter will require at least the 3<sup>x</sup> to remove it.

A paraplegia from congestion of the cord may give way to *Strychnia* 12th, but a paraplegia from anæmia of the cord will require the 1<sup>o</sup> or even 1<sup>x</sup>. I need not multiply examples when there are so many in every-day practice.

Before closing this brief paper, I desire to answer an objection to this law of dose.

It has been remarked, that because some of the antipsorics—*Graphites* I believe was mentioned—cured a chronic diarrhœa in both low and high triturations, therefore this law of dose could not be true.

I do not believe that a true antipsoric, or chronic disease medicine, like *Graphites*, has the power of causing primary and secondary symptoms as I understand them.

Their pathogenetic history resembles that of chronic diseases. Both commence insidiously, or follow some acute illness, and the symptoms progress in slow and continuous order. Therefore the opposite conditions caused by them are alternating states or varying conditions of one state, and do not come under the law I have enunciated.



**ARTICLE XXXIV.—Syphilis Hereditaria Tarda.**

BY PROF. DR. G. LEWIN.

THE oldest syphilidologists acknowledge already the heredity of syphilis, and some of them even put the question, which of the parents, father or mother, exercise the sole, or at least the greatest, influence in this intra-uterine infection. Paracelsus characteristically remarks in this relation: "Where the virus of the French disease is carried into the conception, the child becomes heir to the disease and is born with it. But it may be possible that this is not the case when the matrix is so lustful that it takes all the strength from the sperm, or on account of the nobility and virtue of the semen, then the vice remains in the parents, the infant saved, and comes into the world in good health."

Taking all the nimbus from such fantastic speech, it plainly means syphilis *may* be impregnated into the fœtus from the father as well as from the mother, but there is no physiological *necessity* for hereditariness.

Even at this late day we have not far advanced in the solution of the question, *How long* after birth hereditary syphilis may manifest itself, and whether such manifestation may remain *latent for years*, before symptoms become developed? Some authorities assert that they observed the visible signs of syphilis *immediately after birth*, others only after a few days, and others again only after the lapse of weeks and months. Only very few authorities accept a *syphilis hereditaria tarda*, showing itself after years. The truth of the matter is, that syphilis may show itself very early or very late, for the simple reason, because the infection of the fœtus, brought about by the maternal blood, takes generally the same course as in grown persons, and may manifest itself only after the stage of incubation is finished.

It is well known that infection in grown persons allows two different stages of incubation, the one, lasting *two or three weeks*, begins at the moment of infection, and ends with the appearance of local sclerosis and the indolent swelling of regionary lymphatic glands; the second stage, lasting *six or seven weeks*, reaches to the

appearance of the macular exanthema, proving the *infection of the blood*.

The *chronological difference* between the affection of the lymphatic glands and that of the blood may be thus explained, that the syphilitic virus, absorbed by the lymphatics, is carried to the nearest gland, and causes there, as a heterogeneous, irritating body, swelling of the glandular tissue, which opposes the further transit of the virus. Gradually this opposition is surmounted, how, we do not know, and the virus enters the circulation, the syphilitic fever and the syphilitic eruption appear.

Syphilitic infection has taken such a course in all cases, whether we inoculate the secretion of the chancre or the *blood of syphilitic persons*; we will always see that the exanthematic syphilis appears only after eight or ten weeks. Inasmuch as the infection of the fœtus is only possible through the mother, we will also meet in the fœtus cutaneous syphilis as the first symptom of consummated blood-affection, between the eighth or tenth week. Where this terminus coincides with the time of birth, the child will be born with maculæ syphiliticæ; where the infection happened later, but still about the time of birth, the child may be born apparently healthy, and only after a few days or weeks, presupposing the infection of the child shortly before birth, at the utmost after eight or ten weeks syphilitic manifestations will show themselves.

But where the mother became infected *before* conception, or simultaneously *with* or *shortly after* conception, and where thus the infection of the child took place a long time *before* puerperium (perhaps already in the first months of fœtal life), the infant, if it did not die in utero, will be born with papulæ, pustulæ, pemphigus, and probably show also simultaneously specific visceral diseases.

A number of collected observations supports the probability of such views, but still we are fain to accept them as perfect demonstration. The following case, lately seen, may serve as an example. A pregnant woman, having entered our hospital three months ago, shows only a syphilitic sclerosis on the left labium majus, a moderate, indolent intumescence of the inguinal glands, but was perfectly free from any syphilitic exanthema. Several days after her entrance she was delivered. The child was healthy and strong, without a symptom of syphilis, but it was soon taken down with

severe gastro-intestinal catarrh, of which it died. At the autopsy not a trace of syphilitic infection could be found, showing that a mother, suffering from a syphilitic sclerosis, but having no exanthema, does not infect her child.

In relation to the *further course* of this congenital hereditary syphilis, it probably takes place in a similar manner as in grown-up persons, and the following possibilities may occur. (1.) The sick child is *treated for it*, and apparently cured. But the syphilis relapses after a shorter or longer interval, which may even comprise several years. (2.) The infected child has *no specific treatment*. The implanted syphilitic germ, which according to some observation may also be derived from the father (Bednar, Ricord, Rosen, Hasse), remains latent for some time, but will be developed after a series of years, and grave forms of syphilis will appear. Virchow also supports this view, saying (*Granulationsgeschwülste*, p. 482): the so-called syphilis congenita tarda may remain latent two, five, ten years, and longer, before it takes on forms which show to the attending physician *externally* visible diagnostic manifestations (eruption), but *internally* it was certainly present already at birth in certain morbid foci. We do not deal here with a congenital predisposition, but with a congenital disease.

We have thus two physiological supports for syphilis hereditaria tarda,—it is either a *relapse*, or it represents the *eruption of a syphilitic germ latent in the organism*. This germ is not an imaginary idea, but must be considered similarly to the hereditary conveyance observed in other dyscrasiæ. Such hereditary dyscrasiæ may be divided in two categories. In the one we witness in the early time of the development of the child anatomically established changes, in the other they appear only after the lapse of many years.

To the first division belongs *scrofulosis*, with its pathological state of glands produced by hereditary conveyance. Also those forms of *hereditary anæmia* where, according to Virchow, the heart is too small, the aorta too narrow.

To the second division of hereditary dyscrasiæ, where only at a late period the latent germ is developed, belongs tuberculosis and carcinoma. Corresponding to both divisions the hereditary conveyance of the syphilitic disposition innate to the child may

show at birth already specific anatomical changes of some organs, or may develop itself only in late years.\*

Proofs are sometimes hard to get. We need not only (1), the acknowledgment of the parents, but also the observation of a physician about the course of the specific manifestations in the parents, and (2), the proof of the syphilitic affection in the child. Only in rare cases do we succeed to our full satisfaction in producing the proofs of our case. But let me relate you a case in point. A woman was infected nineteen years ago by a child which she put to her breast to nurse. She again infected her own child, which she nursed, and also her husband. The stranger child, with its congenital syphilis, died. The woman and her child were specifically treated, and apparently cured. But after seventeen years the both patients still showed large defects in pharynx and larynx, and the autopsy of the husband revealed cerebral syphilis. The woman married again, and had two children by her second husband. The first, affected with syphilis, died after five months, the other, to-day a girl of fifteen years, enjoyed good health up to her sixth year, then suffered repeatedly from syphilitic exanthemata, which were apparently cured by Hydrargyrum. The daughter from the first marriage was treated as an infant with Hg., and still she shows scars and defects in pharynx and loss of substance in the epiglottis. This girl married, in her seventeenth year, a perfectly healthy man, whose death was laid to meningitis tuberculosa (eighteen months after the wedding). The fruit of this matrimony was a child, born before term, and which died after two weeks from general weakness. She married again. Her second husband died in the third year from tuberculosis. A boy, now two and a half years old, the offspring of this marriage, suffers from lichen scrofulosus,

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\* We agree here with the learned Professor, and adhere to our frequently expressed opinion, that just as syphilis may show itself outwardly at birth or may remain latent for years, till finally from some yet unexplained cause it breaks out, so also may that dyscrasia, one and the same, show itself in infancy as scrofulosis, or remain latent for years, till finally from some cause or another it breaks out as tuberculosis or carcinoma. Hahnemann after all will come out victorious with his glorious trinity of psora (scrofulosis, tuberculosis, carcinoma), syphilis, and sycosis.—S. L.

and has an ulcer on the right leg, emanating from the detrition of a gumma, and infiltration, and hyperostosis at the metacarpus of the right foot. We must also mention that this married daughter suffers since her sixteenth year from lupus of the right thigh, from periostitis tibiæ et ossis frontis, which constantly relapse in spite of the treatment with Hg.

Similar cases were recorded by M. Hall, Hoffman, Trousseau, Ricord. Laschkewitsch (*Vierteljahrsschrift f. Dermatol und Syph.*, 1875, p. 267), published lately some very interesting cases. He treated a young woman of twenty-two and a boy of fourteen years. Both patients offered the same picture of general exhaustion and a retrogression in their development; some organs, as the mamma and genital organs, show no signs of development. The autopsy revealed amyloid degeneration of the liver, spleen, kidneys, and testes. That syphilis was not acquired *after* birth is clearly shown by the absence of every vestige of a diseased state of the skin, mucous membranes, or genital organs.

Hutchinson considers as characteristic of hereditary syphilis prominent frontal tuberosities, dulness of the cornea, keratitis parenchymatosa, scars on the mucous membrane of the mouth and nose, deformities of the incisor teeth. Not one of these symptoms, standing alone, can be considered as a diagnostic proof, but the presence of several together allows the diagnosis of probable hereditary syphilis.

One of my patients is now eighteen years old. According to the words of his parents he was born perfectly well, and remained so up to his fifth year. Then he became affected with swelling of the tibia and ulceration of the soft parts. Domestic remedies were used, and after five years' suffering he was again apparently well. Simultaneously, affections of the pharynx and larynx set in, also leading to large ulcerating destructions. For the last four years he had ulcers on the nose and face. There is also destruction of the gums, and both upper incisors, which show Hutchinson's characteristic deformity (Albrecht affirms that other dyscrasiæ may also produce it) lie loosely in the alveoles. In the buccal cavity the palatum durum, and partly also the velum, is destroyed; only small fragments exist of the latter, which adhere to the posterior wall of the pharynx. Deep scars on the posterior

wall of the pharynx show the intensity of the past ulcerations. Epiglottis only present as a small, somewhat thickened remnant. On both legs extensive hyperostosis of the tibiæ, to which adhere the atrophied soft parts, covered with radiating scars of a white color. Here and there on the thighs scars, deeply penetrating into the tissues, and whose epidermis manifests the characteristic thinness and gloss. On the eyes we find remnants of a parenchymatous keratitis, from which patient suffered three years ago, and cured by Iodide of potash. The *retarded development of this patient* of eighteen years is remarkable, so that he looks more like a boy of twelve. His testes are small, like those of a boy, the *mons veneris* shows not a trace of hair, and he acknowledges never to have had erections. In spite of the destructive character of the disease, the patient does not complain of any difficulty in swallowing, nor of any pain, in fact the other patients in the ward enjoy his constant good-humor.

In relation to the source of the infection, we are informed that the father became infected several months after his wife became pregnant, probably had a chancre and a cutaneous eruption, and underwent a mercurial treatment. His infected wife recollects only to have had warts on the genital organs. Both parents are very reticent about their former history, and we need not wonder that the manifestations in the mother were not very extensive, for Astruc already declared it possible that a wife, without being herself syphilitic, may bring into the world syphilitic children; and Swediaur even affirmed that the father is always to blame for hereditary syphilis. Cederschjold, Diday, and Trousseau cite many cases where syphilitic children were the offsprings of syphilitic fathers, although the mothers never became affected. Even Baerensprung, who is not favorable to this view, gives a case where a child had a syphilitic affection of the liver, although the mother did not show a trace of syphilis. Feisel also acknowledges that by far the greater part of newborn children, who are born syphilitic, have to thank their fathers for it, but their wives frequently become by and by syphilitic. The case we just mentioned might be considered by some as lupus, a destructive process producing large defects, but the combination with topi clearly demonstrates its syphilitic origin. We wish to lead your

attention to the pathologico-anatomical changes of the *epiphyses of the hollow cylindrical bones*. In most cases this disease of the bones is combined with other luetic manifestations found in other organs, but sometimes it is the sole characteristic symptom of congenital syphilis. When examining the thigh of such an hereditary syphilitic child, or the upper and lower ends of the tibia and fibula, we can move the epiphyses on the diaphyses, as in a fracture, and simultaneously crepitation may also be heard, but there is no fracture whatever, the epiphysis only becomes dissolved from the diaphysis. In many cases these changes in the articulations can be observed during life, so that we are obliged to put the extremity in a plaster of Paris bandage, and from this abnormal mobility the diagnosis of congenital syphilis may be made. This mobility can be easily detected during the life of the infant. With the left hand we tenderly grasp the diaphysis at its border with the epiphysis, and with the right hand we move it carefully in opposite directions, and thus we easily feel the abnormal mobility and crepitation. Frequently the altered position and mobility of the foot is already characteristic, and many a time we find the child acting very carefully with the affected limb, on account of the pain produced by motion. This morbid affection of the bones is of a gummous nature, and Cohnheim describes it as *ostitis gummosa*.

Professor Edlessen, of Kiel, observed the following case, which proves that even a late form of hereditary syphilis may be transmitted to others.

Nov. 17th, 1871. A woman came for treatment, who was about six months pregnant, and had been infected probably from her husband; showed unmistakable symptoms of syphilis;\* broad condylomata on the inner surface of the labia majora and in the neigh-

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\* Psora, syphilis, sycosis. Here we have a clear case of sycosis, showing the same hereditary tendency inherent to all dyscrasie, and we will find, with Albrecht, that there is really not one symptom which could be claimed as characteristic of either one. Thus the worthy Professor failed to eradicate the poison, as he had treated the case as a syphilitic one, instead of employing antisycotic remedies, and still, in the grandmother and babe, the Merc. cor. cured. Who will ever find out the difference between these grand animal poisons?

borhood of the anus; a rhagades on the anus; an exanthema maculosum over the whole body; plaques muqueuses on the mucous membrane of the fauces; swelling of the inguinal and cervical glands. Mercurial treatment brought only slow improvement, and, January 17th, 1872, she was delivered of a dead and decomposed child. After the puerperium and a tedious illness, caused by metrorrhagia (placenta prævia), the mercurial treatment brought more rapid improvement, so that by June she could be discharged cured. During that time the woman became again pregnant, and, December, 1872, was delivered, at full term, of a healthy strong child, which showed no symptoms of syphilis, even after a few months. March, 1873, the child broke out with an exanthema maculosum, relieved by baths impregnated with Merc. cor., and powders of the same preparation internally. The woman appeared now perfectly healthy, but still she miscarried, Christmas, 1873, with copious hæmorrhage. July, 1874, she miscarried again. Dr. Wesphalen, the attending interne, recognized on the villi of the chorion that the woman, although showing no visible sign of syphilis, was still to be considered syphilitic. At the same time she brought her little boy, now eighteen months old, to the policlinic, on account of a small ulcer which he had for the last six months on the lower lip; it was not larger than a small pea, funnel-shaped, and showed a shining lardaceous coat, the edges moderately indurated, and the adjacent tissues of the lips swollen and prominent. No other traces of this relatively tardy syphilis could be detected. Four bottles of Iodide of potash, 3:150 aqua, four times daily a teaspoonful, brought the ulcer to a healing process; but, August, 1874, the child was brought back with the same ulcer on the same spot. The Iodide of potash failed this time, so also Calomel 0.01, four times a day, increasing the dose gradually; finally we changed to Merc. cor. 0.10:200 aqua, three times a day a teaspoonful. The child bore this preparation well, and after having taken 0.30 in toto the ulcer was healed; but in order to keep off relapses the drug was continued for several months, at longer intervals, and in decreasing doses.

August, 1874, the grandmother consulted me on account of a psoriasis syphilitica on the forehead, on and behind the conchæ and on the scalp, small syphilitic papulæ on the labia majora,



strong redness of the fauces, swelling of the inguinal and cervical glands. The syphilitic nature of the exanthema was clear, and after taking 300 pills of Merc. cor. the entire exanthema was gone, and no relapse ever followed. The old lady acted as a nurse to the child, kissed and fed it, and many a time, in order to find the temperature of the food, tasted it herself. The grandfather remained entirely well.—*Berl. Klin. Wochschrift*, Jan. 1876.

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### General Record of Medical Science.

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*On the Clinical Value of Fatty Emboly*, by Prof. V. Gerny.—Simple fractures of the long bones usually offer such a good prognosis, that hardly any text-book mentions cases where death sets in suddenly and unexpectedly. Its cause, thrombosis and emboly, was only of late studied and explained. Meissner (*Schmidt's Jahrb.*, 117, p. 248), and Gam (the same, 181, p. 336) collected some cases, where from relatively unimportant injuries either sudden death or at any rate a sudden severe dyspnœa appeared, which could only be explained by a pulmonary emboly, emanating from a loosened fibrinous clot. Wagner observed fatty emboly most frequently side by side with metastatic abscesses, and Buch (*Virchow's Archiv*, p. 321, 1866) showed that the fat of the crushed bone-marrow, being absorbed by the veins and lymphatics, causes pulmonary embolies and thus death.

Gerny gives then a case where a young mason fell from a scaffold and fractured his thigh. The simple fracture was easily set, but it was on the second day after the accident remarked that pulse and respiration was accelerated, and he died during the night. At the autopsy microscopical examination of the lungs showed the small arteries and capillaries tightly filled with a clear fluid fat, in the brain as well as in the kidneys fatty embolies could be found in the bloodvessels in large quantities, and the intravenous bloodvessels of the liver contained drops of fat of the size of a blood-corpuscle. The fatty emboly of the lungs was so great as to suffice as the cause of death, for it caused circulatory disturbance in the lesser circulation, leading to œdema and poisoning by carbonic acid. The diagnosis of fatty embolism was already made before the autopsy took place, for (1) no symptoms of injuries of internal organs were present; (2) shock could be excluded, as the patient fully recuperated from the immediate action of the injury, and collapse without any cause about twenty-four hours after; (3) the symptoms, preceding the agony, clearly hinted to circulatory disturbances in the lungs; (4) an embolus from a loosened venous thrombus can hardly be expected before the eighth day, whereas fatty emboly already begins in the first hours after the injury to the bones. During life the sudden rise in the tem-

perature, the respiratory troubles, and the painlessness, or rather the diminished sensibility to pain in cases of simple fractures, may lead our attention to the suspicion of fatty embolism.—*Berl. Klin. Wochschr.*, 44, 1875.

*The Ulcers of the Planta*, by E. Moritz.—Ulcers of the planta originate either from a constitutional basis or they are a mere local affection. Leprous, neuroparalytic ulcers, or such depending on vascular atherosclerosis, belong to the former group; syphilis and scrofulosis might also lead to ulceration of the planta. Ulcerating corns are most frequently the cause of the local affection. All plantar ulcers have a tendency to excite inflammation in deep-seated parts, and this extension of the inflammation is decidedly a preparation by gradual extension of the ulcers. This peculiarity of plantar ulcers has its cause in the anatomical and physiological relations of the sole, which (1) is more exposed to pressure than any other part of the body, and (2) is favorably situated for a blood-stasis, (3) whose sinews, mucous bursæ, bones, etc., as soon as the epidermis is gone, are exposed to all noxæ. There is nothing peculiar in the so-called "mal perforant du pied," which is not a disease sui generis, and it is far more advisable to call them by their adjectiva, as *Ulcus plantare e clavo*, e congelatione, neuroparalyticum, etc.—*Med. Neuigkeiten*, 44, 1875.

*Chloral for Seasickness*, by Dr. Obet.—On the first day Chloral is given in one dose of one to two grains, and the dose is several times repeated the following day. This treatment allows the travellers to take their meals regularly without any disturbance. Even pregnant women took the Chloral during the sea-voyage and escaped the dreaded ailment. According to the experiments of Carville, Ore, and Vulpian, Chloral suspends the sensibility and the reflex activity in the nervous system, as Chloral acts on the spinal cord and not through the vasomotory nerves. Inasmuch as seasickness arises from an irritation of the spinal cord, and Chloral action acts on the spinal cord, its beneficial action finds thus its explanation.—*Alleg. Med. Centralztg*, 83, 1875.

*Cocculus* has in our school a great reputation for curing and preventing seasickness. According to Hughes it acts on the motor tract of the cranio-spinal axis from the corpora striata to the cauda equina. "Seasickness is the type of *Cocculus* vomiting, and there is little doubt that the seat of this affection is primarily cerebral" (*Pharmacodyn.*, 224). Let us not be too hopeful. *Cocculus* and *Petroleum* have disappointed me in severe cases, and so will Chloral, and light cases frequently cease after twenty-four hours. Others recommend the horizontal position for the first twenty-four hours, which must be taken before the steamer leaves the wharf, and the swallowing of ice-pills during that time.

*Abuse of Morphium Injections*, by Dr. Lewinstein.—The disease, which causes severe functional disturbances, is similar to chronic alcoholism, and a delirium tremens morphii has been several times observed. Physicians ought to be careful with their hypodermic injections of Morphine, as it easily grows into a habit.

*Dr. Lewinstein considers it worthy of attention that the abuse of Morphium produces the same pathological manifestations for which it was indicated, and the withdrawal of the Morphium causes an increase of the disturbances in the cerebro-spinal and vasomotory nervous system. Still it is far better to withdraw the Morphium at once than successively, and such patients must be treated like prisoners— isolation, constant watching, windows and doors well barred, clothing and furniture must be steadily under surveillance, as it is characteristic for all who come voluntarily or involuntarily under treatment that they carry quantities of Morphium and syringes with them.*

Twelve hours after the withdrawal of the Morphium collapse will set in, and the patient, therefore, has to remain in bed and may drink heavy wines ad libitum. A suicidal mania develops itself during the first three days of their abstinence, and careful watching is therefore necessary. The diarrhœa, which always appears after the withdrawal of the Morphium needs treatment only when it becomes excessive.—*Wien. Med. Wochschr.*, 46, 1875.

*Extracts from "Des Contractures, par le Dr. J. Strauss," Paris, 1875.—Contractures are tonic, involuntary, and enduring contractions of one or more animal muscles, and must not be mistaken for muscular contractions in tonic and clonic spasms, or considered as a shortening after degeneration of a muscle, although such a degeneration may sometimes take place in the course of long-continuing contractions. We also consider differently the permanent shortening of the antagonists of paralyzed muscles, the so-called shortening by adaptation, and the muscular rigidity as observed in cataleptic states. The contractures setting in at or sometimes after the apoplectic fit are rather tonic convulsions. They are more frequent after hæmorrhages than after ramollissement, and are probably caused by a rupture in the ventricles or in the meninges. Even with a unilateral apoplectic focus bilateral contractures may appear. Genuine hemiplegic contractures appear at a later stage, are permanent, and attack alike the flexors and extensors of the paralytic extremities. The late contracture of formerly paralytic facial muscles may simulate a change in the paralysis. These contractures do not disappear during narcosis, nor do they change the electrical relations of the muscles and allow only an unfavorable prognosis. Contractures based on inhibitory formations of the central nervous system and causing the inhibitory deformities of the idiots and hydrocephalic patients are of a similar nature. In all such cases we meet fatty degeneration of the capillaries, varicosity, and finally atrophy of the nerve-fibrillæ, emanating from the focus and extending through the crura into the spinal cord, and especially into the lateral columns, and are neither caused by inability of performing their functions (Türck), nor by the solution from the trophic centre (Bouchard), but by the extension of the inflammatory process in a certain direction.*

Fixed contractures appear in the for a long time relaxed paralytic muscles from spinal affections, after tonic contractions have at first for a little while been witnessed (spinal tonic epilepsy), and these correspond pathologically with the former. In both we meet sclerosis of the posterior columns, manifesting itself by atrophy of the motor ganglia outwardly as atrophy of the contracted muscles.

Hysteric contractures offer the most variations, which in long-continued hysteria, after convulsions, after paralysis or anæsthesia, lasts for years or forever. They are either hemiplegic and then the upper extremity is mostly flexed, the lower one extended or paraplegic. Hysterical contractures are mostly partial and limited to solitary muscles or small parts of muscles, as the pes varo-equinus of hysterical patients, the hysterical coxalgia, trismus, laryngismus, and œsophagus spasm of hysterics. They leave the electrical relation of muscles unchanged, and offer no sensory disturbances in the contracted muscles.

In the contractures appearing in consequence of muscular diseases, histological changes in the muscles are frequent, still they cannot be considered as the cause of the contracture, and we have to look for it in the ischæmic process of the muscle, or in the thrombosis of the bloodvessels of the muscle. Contractures observed after injuries of peripheral nerve-branches are of reflex nature. The origin of these contractures, which Duchenne describes as functional spasm, and which are described as spasm of scribes, telegraph-operators, pianists, and tailors, may entail contractures.

We have furthermore a contracture by intoxication, as after poisoning by ergotin, etc., whereas the contracture so regularly observed in scurvy, especially of the lower extremities, is mostly caused by disturbances of nutrition.

*Tetania* or essential contracture appears suddenly without any known cause, attacks single extremities or the whole body, simulates the tetanus, and disappears soon, only to reappear after a short interval. We do not find here any histological changes in the nervous system, and the prognosis is favorable in spite of high fever and respiratory spasms. We mostly meet it in children, or in pregnant and nursing women; may only last a few hours or extend over several months. A transient circulatory disturbance of the medulla may be the cause of tetany.

Electricity in the form of the constant current is recommended, also Atropine, Bromide of potash, and other anæsthetics.

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*Mental Affections after Variola, by Dr. Ed. Stephanides.*—After the most various acute febrile diseases morbid affections of the nervous system may set in, or psychological disturbances which can hardly be differentiated clinically; but the mental affections after variola offer such exquisite manifestations, that from their totality we may conclude that the mental affection stands in a direct or indirect causal connection with the small-pox.

Westphal led our attention to it in 1872. He found in all such cases with the psychological disturbance, setting in at first with great irritability, to be followed by a decrease of memory, a considerable change in the physiognomy, and certain motory disturbances (as a change in the voice and speech, totally differing from the changes observed in progressive paralysis); the single words are uttered with great labor, and with a monotonous, mostly nasal voice. There is also a certain ataxy of the extremities with well-preserved sensibility of the skin. All movements are carried out in a trembling, undecided, slow manner, in fits and starts as it were, and they often repeat movements already

executed. The extended fingers, the erect head, tremble nearly continually; but this trembling of the head ceases when the head is supported, and increases during every intended movement. The prognosis is doubtful, and a cure is only probable during the first six months.

In Westphal's cases the variola was light; but Stephanides also observed it after a severe attack of the small-pox. All his cases suffered from melancholy with hallucinations, as if a change had taken place in their own persons; in all three cases there was also rapidly appearing, and rapidly disappearing redness of half or the entire face, neck, chest. When this melancholic state had lasted some time, intelligence becomes weakened, they have maniacal fits for a longer or shorter time, followed more or less by catalepsy, with loss of motion and speech, and refuse food. (*Katatonie of Krafft Ebbing.*) The motory disturbances keep up during all the different phases of the diseases although hardly observable during the cataleptic stage, and continue even when the mental affection has apparently disappeared.—*Psych. Centralblatt*, November, 1875.

*Chloral, an Antiseptic, by Dr. M. Ste.*—Professor M. Sée uses nearly exclusively Chloral in the hospital of St. Eugénie in binding up wounds. Even in erysipelas and diffuse phlegmone its use for two or three days suffices to remove these grave complications. He mentions, among others, two amputations of the thigh, two resections of the elbow, two resections of the calcaneus, a penetrating wound in the elbow, numerous contusions with extensive blood-extravasations, etc., all of which ran a favorable course. He uses a solution of one per cent., with which he irrigates the wound, and bandages it then in the usual manner. The Chloral has a pleasant odor, is not volatile, nor does it possess any irritating qualities. Its absorption remains without any evil consequences, so that it also can be used in affections of the fauces and nasal cavity. Its cheapness in hospital practice is also of some importance.—*Journal de Thérapeutique*, 14, 1875.

*Thrombosis and Emboly of the Aorta.*—Dr. Choostek divides the cases into four groups. 1. Cases of emboly of the ostium aortæ. Three cases are on record, one from carcinoma cordis, perforating the endocardium; one from a myocarditic focus, and one from aneurisma cordis, leading to thrombosis on the affected spot of the left ventricle, which, after becoming detached, became fixed at the ostium aortæ. In the first and second case the death was sudden, in the third, after one and a half hour, preceded by sudden, severe pains in the cardiac region, cold sweat and anguish. The obstruction probably was not perfect, and death only ensued after it became perfect. 2. Thrombosis, in the course of the aorta, thrice in the thoracic at the posterior end of the arcus, once in the abdominal. An atheromatous process of the aorta is cause of the thrombosis, and the thrombus is seated around the wall of the blood-vessel, so that its lumen is not fully plugged up. 3. Thrombosis of the lower portion of the aorta abdominalis, reaching into the arteriæ iliacæ, and perfectly obturating the aorta. As long as the thrombus adhered only to the walls, no symptoms will be observed; only after the obliteration becomes perfect, the lower extremities will become paralyzed, anæsthetic, and the seat

of severe tearing pains, cold and pulseless; death follows in a few days. 4. **Emboly** at the place of bifurcation. Where the embolus does not fully close up the bloodvessels, only a momentary perturbation takes place, as numbness in one, and then in both extremities, coldness, pains, disturbance of mobility, all of which gradually passes off again. Lebert gives the following symptoms for emboly and thrombosis of the abdominal aorta: immediately after the occlusion neuralgic pains in the lower extremities and hypogastrium, sometimes at first hyperæsthesia of the lower extremities, followed by numbness and perfect anæsthesia. The arteries in the lower extremities become pulseless and cold; only where a collateral circulation has developed itself, a weak, retarded pulse may be felt. The extremities become more or less paralyzed, having been preceded by a spastic state. Anæsthesia is usually more outspoken than motory paralysis. The more perfect the obturation is, the sooner mortification sets in, beginning at the toes and rapidly progressing upwards to the parts still provided for with blood by the collateral circulation. Where the venous circulation is simultaneously obstructed, œdema and sphacelus of the lower extremities follows. General symptoms are: chills, sleeplessness, emaciation, deliria, collapsus, and coma, ending usually in death; a perfect cure is a rare case.—*Der Militärarzt*, 22, 1875.

*On the Internal Use of Salicylic Acid.*—Dr. Riess uses the following formula: Acid salicyl., 5,0; Natr. phosph., 10,0; Aquæ dest., 50,0; or, Acid salicyl., Natr. carb., aa, 5,0; Aquæ dest., 50,0; where exceptionally vomiting sets in, he adds Tinct. cort. aur., 3,0, to the mixture. For children from six to twelve years 2,5 suffices; and to infants, the dose must be still smaller. In some persons it produces a slight dulness of the head, moderate sweating, transient surring in the ears, also amblyopia. It certainly produces a diminution of the temperature; and in febrile diseases the temperature may even decrease four or five degrees. In many cases this decrease lasted for nearly twenty-four hours; in other cases its effect passes off in a few hours. We learned that the resistance of the fever to the action of the acid is in proportion to the gravity of the case, and especially is this true of fatal febrile diseases, where, during the last days, hardly any sinking of the temperature takes place, and many a time we gave a bad diagnosis from the absence of any action from the Salicylic acid. We also found that the employment of the usual cold bath aids the action of the acid, and it is a pleasure to walk through the wards and find every patient, suffering from typhoid fever, cool, and apparently without fever, instead of the former calor mordax.

It hardly shows any action on the pulse. During the acme of the fever the pulse remained at 120 and over, though the temperature was only 36 or 37. Its effect on the quality of the pulse was somewhat more favorable; it becomes more tense, and the pulsus dicrotus is less frequently observed.—*Berliner Klin. Wochenschrift*, 50, 1875.

*Therapeutical Hints.*—Peter (Hôpital St. Antoine) gives in cases of severe dolores osteocopi in the place of all other antisiphilitics very small doses of Calomel, one centigramme pro die in ten doses, a dose each hour; the pains

cease, and the patient sleeps. Three days suffice for a cure.—*Lancet*, Nov. 1875.

Heller recommends for acute articular rheumatism several times a day one drop of *Liquor ammon. caust.*, diluted with water, and witnessed from it immediate cessation of the pains and of the swelling.—*Wiener Med. Presse*, 47, 1875.

*Chorea*.—Dickinson reported at a meeting of the London Royal Medical and Chirurgical Society, that he found in seven fatal cases of chorea the following pathological changes: injection of the bloodvessels, especially of an arterial nature; in the brain and spinal cord small hæmorrhagic foci on different places of both centres, and in old cases numerous sclerotic foci in the brain, and especially in the medulla. Both sides of the central organs were mostly symmetrically affected. The parts of the brain most frequently affected, lie between the base and the floor of the fourth ventricle, the *subst. perforata*, the *corpora striata*, and the beginning of the fissures of Sylvius; in the spine, the posterior and lateral parts of the gray substance of the upper part of the medulla. The arterial hyperæmia is the starting-point for all changes. He believes that rheumatism may cause simultaneously endocarditis and the affections of the central nervous system, although endocarditis may also be caused by a preceding chorea.—*Berl. Klin. Wochenschrift*, 48, 1875.

*Transferred Mental Disease*.—Dr. Maret reports the case of two brothers: Baptiste D., a Tyrolian, was five or six years in Spain; and then, about 1870, entered the foreign legion of the French army. Becoming insane, he entered the asylum at Auch, suffering from mania de grandeur. He was the son of the emperor of Austria, and only entered the army to unite the French with the Italian crown. He was loquacious, incoherent in his speech, but always returned to his grandeur ideas. His younger brother, Joseph, the very picture of the older one, followed his brother into Spain, and with him entered the foreign legion, and also the asylum. His hallucinations were the same. Simultaneously with his brother he will be crowned in Rome, and they will stand in the most friendly relations with all foreign powers. The Mother of the Saviour favors all their plans.

Mariet believes that Baptiste became first insane, and that Joseph became inoculated with the same hallucinations, but feels sorry, that the anamnesis of these cases is wanting.—*Annales Medico-psychologique*, June, 1875.

*On the Action of Cantharides*.—Dr. Alessandro Cantier, experimented on animals and came to these conclusions: (1.) Cantharides, taken inwardly, changes the composition of the blood; they separate and contract the blood-corpuscles when they come in direct contact with them, but contract them only when the action appears after absorption has taken place. (2.) The faculty of contraction of the heart and of the walls of the bloodvessels, thus also the arterial tension, is diminished by it, the rapidity and frequency of the beats of the heart and the temperature of the body increased, but it disturbs nutrition and thus acts debilitatingly. (8.) It causes in different organs

blood-stasis, and with a sufficiently large dose even inflammation. Hyperæmia of the brain and spinal cord ensues, in the latter even decided softening, especially in the dorsal and lumbar region, followed by paralysis of the lower extremities and loss of reflex activity. (4.) The membranes of the brain and spinal cord appear greatly hyperæmic, especially at the base of the brain corresponding to the medulla oblongata, causing frequent respiration and increased acceleration of the beats of the heart. (5.) It causes hyperæmia and inflammation of the urinary and sexual organs, desquamative or parenchymatous nephritis, sometimes with albuminuria. The sexual nisus is increased, and abortion may take place. (6.) It causes gastro-enteritis, with extensive hyperæmia, ulcers in the gastric mucous membrane, and effusion of a yellow mucus. An injection of the tincture into the veins only causes congestion of the gastro-intestinal mucous membrane, sometimes with diarrhœa.—*Med. Neuigk.*, Dec. 1875.

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*Syphilis of the Lungs.*—Dr. Emil Rollet remarks that syphilis of the lungs appears either in nodulated masses of a round, ellipsoid or irregular form and different sizes, solitary or diffused over larger parts of the lungs, or as *diffuse infiltrations*, alone or simultaneously with nodules, extending over an entire lobe or even over both lungs (in newborn infants). It leads in its course to fatty atrophy or detrition into cheesy masses, to ulcerations and formation of cavities, or to a development of more or less extensive masses of callous connective tissue. The manifestations during life are therefore the same, as found in other anatomically similar processes, in chronic cheesy pneumonia, in tuberculosis, carcinoma. Grandidier gives as the characteristic of pulmonary syphilis, that its seat is nearly exclusively the middle right lobe, but cases are on record where the syphilitic affection was in the left lung. Still *the entire freedom of the apices and the prevailing seat in the centre of the thoracic region*, whereas the tuberculosis nearly exclusively attacks the apices, is of great diagnostic importance. The dulness on percussion over the affected parts will aid us in our diagnosis.

We always find more or less dyspnœa, partly in consequence of the diminution of the surface of respiration from the development of the syphilomata, partly from the stenosis of the lumen of larger neighboring bronchi, or from the accompanying catarrhal swelling and the presence of fluid in the organs of respiration, or from secondary inflammation of adjacent lobuli. The dyspnœa may increase to orthopnœa or even to asthmatic paroxysms. The patient complains of a sensation of heaviness and pressure in the chest, with sticking pains, especially during percussion, or when taking a deep breath, the latter clearly from an inflammatory irritation of the pleura, when the seat of the disease is peripheric. The cough is mostly dry, especially in recent cases, sometimes with bloody sputa, even copious hæmoptoe; during later stages we meet the expectoration of consumptive patients. Fever is hardly ever present, and is always caused by complications. Percussion shows more or less extensive, sometimes sharply limited, round or irregularly formed dulness, mostly in the centre of the thorax, unilateral or bilateral, especially on the anterior and lateral surface, and between the scapulæ. Resistancy is



remarkably increased over the dull spaces, and vocal fremitus weakened or absent, only exceptionally increased. Auscultation shows there absent or diminished irregular respiratory murmur, sometimes bronchial breathing and rattling. In later stages cavernous symptoms.

Of great importance is the presence of manifestations of constitutional syphilis in other organs, especially swelling of the axillary, inguinal, or other glands, traces of syphilis on the skin, mucous membranes, bones, anamnesis of the infection and of the course of the disease, the total absence of the so-called habitus phthisicus, and the absence of any former inflammatory disease of the organs of the chest, of a pneumonia or pleuritis. An amelioration from antisiphilitic treatment certainly favors the conclusion that the syphilis, clearly present in other organs, may have also its seat in the lungs.—*Wien. Med. Presse*, 47, 1876.

*Phthisis Pulmonalis*.—Dr. Aufrecht begins his essay with the remark that phthisis pulmonalis and tuberculosis are not synonymous, and he agrees with Virchow, who considers the tubercle as something adventitious to the phthisis. We might say phthisis begins as an inflammatory disease of the apices of the lungs, and where it takes a different course from other inflammatory diseases we put the blame to a special disposition of the body, which might be hereditary, as in persons descendants of consumptive families, or acquired through the action of diverse noxæ. *Phthisis may, therefore, in many cases be prevented and in some cases cured.* The prodromal stage, the inflammatory focus in the apex, whose detrition causes phthisis, offers time enough, sometimes even years, for treatment; but to do so rationally, an early diagnosis is necessary. It may be difficult, inasmuch as the starting seat of the inflammation at the apex is only a small focus, causing no symptoms usually found in pulmonary affections, as thoracic pains, stitches, coughing, expectoration, etc. But many patients show other symptoms which lead the attentive physician to an objective examination of the chest. Here we mention *anæmia* with all its symptoms as of special importance. In young people of 15 to 25, this is a frequent accompaniment of phthisis, and in girls has many a time been mistaken for chlorosis. A strict examination of the lungs, especially of the apices, is of the utmost importance in such cases, before we declare such girls chlorotic. It is true that Quinine and Iron may be indicated in either case; but where phthisis threatens, we would strictly forbid the usual pleasures of a winter season, and send our patients to the mountains during the summer months. Menstrual disturbances stand in close relation to our point at issue. How often have we seen that the amenorrhœa was considered the cause of the phthisis, whereas it is really the sequela of the pulmonary affection, and an examination of the lungs would have demonstrated the seat of the disease, although no symptoms had yet shown themselves. Another symptom at the very start of the disease is *pityriasis versicolor*, these pale-yellow or pale-red, spots on the chest, back, and neck, more rarely on the arms; but which also may attack large surfaces of the body. Naturally we expect to meet it most frequently with people who neglect the culture of their skin. The *anæmia* as well as the *pityriasis*, during the early stages of infiltration of the apices of

the lungs, hint to nutritive disturbances leading to a deterioration of the blood.

Two morbid affections stand in immediate relations to the morbidity of the apices of the lungs: 1. Rheumatoid pains in the upper extremities; 2. A deep position of the clavicle. These rheumatoid pains have also been observed between the scapulæ, appear suddenly in the night or towards morning, and are possibly caused by an extension of the inflammation from the lungs to the pleuræ, forming adhesions, and thus drawing into the morbid process the subpleural connective tissue and the intercostal nerves. There is no aggravation from motion, and we hardly ever see muscular rheumatism so strictly localized to the upper extremities. It is well known that the acromial end of the clavicle, under normal relations, stands considerably higher than the internal sternal one. Where one apex is affected, or one more than the other, the clavicle on the affected side stands deeper at the acromial end than at the side of the non-affected lung, and in severe cases the acromial end may even lie on a level with the sternal end.—*Allg. Med. Centralzeitung*, December, 1875.

*The Cold Douche in Membranous Croup*.—Dr. Lahillonne, of Pau, begins his treatment with an emetic, and then puts cold compresses around the head and neck. As soon as paroxysms of suffocation set in, he puts the child in a warm bath of 40° to 44° C., but keeps head and neck enveloped in cold compresses. After ten minutes the child is taken out of the bath, and, at the same time, two large pitchers full of cold water thrown over neck and spinal column. The douche causes deep inspirations, the child coughs violently, and expectorates. It is then enveloped in warm flannels, except the head and neck, where the cold compresses are continued, and wine or beef tea allowed. Perspiration usually sets in, and the child sleeps. The same procedure is repeated at every attack of suffocation.—*Deutsche Med. Wochenschrift*, November, 1875.

*Lyssa Humana successfully treated with Curare*.—The patient was a girl of 24 years, who was bitten by a dog, suspected to be rabid, eighty days before. After the failure of Morphine injections and Chloroform inhalations, Curare, 0,2 grammes in seven doses, was injected during five hours. The muscular restlessness decreased, the spasms became more rare, the hydrophobia and photophobia disappeared, and instead of the anguish she was in good-humor. But symptoms of paralysis set in, reaching their maximum the following day. The second day after the injection, the symptoms of lyssa reappeared in a slight degree; one injection of 0,08 grammes of Curare sufficed to suppress them. The patient recovered only slowly, and even after two months she still felt weak, moved about slowly and without energy, and her sight was not as strong as ever. An inflammation with infiltration, but without suppuration, set in at the place of injection.—*Zeitschrift f. prakt. Med.*, 52, 1875.

*The Aleppo Boil (Bouton annuaire)*.—Dr. Schlimmer, who for twenty-seven years resided in Syria and Persia, gives the following description of this cutaneous disease. Without any preceding manifestations of congestion, there

appears on the face, more rarely on the extremities, a small nodule of the size of a millet-seed, without any peculiar redness. It might be taken for a fununcle, but its stationary state, the absence of pain, tension, and redness, render the diagnosis clear. Very slowly and gradually this nodule grows during the next three or four months without any pain, so that it will hardly be noticed on covered places. After that ulceration begins in the interior of the nodule, the adjacent tissues become infiltrated and take on a bluish-red color, finally it opens in the centre and discharges ichor, drying up to dirty-yellow or coffee-brown crusts. The ulceration progresses towards the infiltrated periphery. After removing the crusts, we find at the floor of the ulcer indolent, miscolored, hard granulations, which soften only slowly, to be replaced by similar ones. Towards the ninth to eleventh month, spontaneous amelioration sets in, the infiltration in the adjacent tissues disappears, normal suppuration and granulation of good color sets in, cicatrization follows from the periphery to the centre, and there remains only a smooth deeply pigmented cicatrix. There may also be multiple boutons, and at the lower part of the nose several of them may become confluent, and cause by the ichoration a defect of the nose. It is a benign trouble, without any danger, if not maltreated; in fact the natives consider it a *noli me tangere*. European physicians cauterize the bouton with *Acidum nitricum*, *lapis infernalis*, or *Cuprum sulfuricum*, according to the locality. Thorough cauterization is necessary, so that the whole infiltration looks pale-yellow after the cauterization. After falling off of the crust, suspicious granulations must be again cauterized. If done early, the whole disease aborts, and a superficial hardly visible scar remains.—*Wien. Med. Wochschrft.*, 52, 1875.

Might not the scooping out process of Hobra be here the best cauterization, as the operator clearly feels when he comes on sound tissues, and thus the whole process simplified?

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*Heredity of Syphilis.*—Dr. M. Kassowiz came to the following conclusions: the possibility and frequency of congenital syphilis in infants from non-syphilitic mothers has been clearly demonstrated. The process of poisoning happens: (1.) The infection of the healthy mother through the fœtus infected by the father through the placental circulation. (2.) The infection of the mother from syphilitic sperma during the embrace. (3.) The infection from the sperma of a man suffering from latent syphilis, but free from infectious symptoms, independent of the embrace. A woman pregnant from a syphilitic man gives birth to syphilitic children, but remains free from syphilis, if not infected from outside; the syphilitic poison does not transgress the barriers of the fœtal and maternal vascular system, in the direction from the fœtus to the mother. A child, where both parents at the moment of generation were not syphilitic, never becomes syphilitic, even when the mother gets infected at any time during pregnancy. The latter may disturb the course of pregnancy or even interrupt it, but is never transmitted to the child. Nor does the syphilitic poison overstep the barriers of the fœtal and maternal vascular system in the direction from the mother to the fœtus. Father and mother equally share the penalty and the process of hereditaryness

of syphilis; the presence of syphilis in one of the parents suffices at the moment of procreation to give this heirloom to their child. Where the mother is infected with general syphilis, after conception has taken place, it remains without influence on the heredity of syphilis. Syphilis of the mother is only in so far more deleterious than that of the father, as it may produce an interruption of pregnancy. The different degrees of intensity of heredity show themselves in the fœtus in three different directions: (1.) In the interruption of the normal pregnancy by abortion or miscarriage. (2.) By diminishing the chances of life in the fœtus. (3.) By the eruption of visible symptoms in viable children. It is a fact, the children begotten in the first years after the infection of the parents are nearly without exception born immaturely, and the cause of the death lies in the fœtus, and only exceptionally a child remains alive. The eruption of a syphilitic exanthema in the third month of a living child may be considered as a symptom that the hereditariness of syphilis for the children becomes nearly extinguished.—*Wien. Med. Jahrb.*, 6, 1875.

*Volkman's Scraping Spoon in Skin Diseases, by Dr. H. Hebra.*—The operation of removing flat neoplasms with Volkman's steel-scoop has been successfully used in the Vienna dermatological clinic. The instrument differs somewhat from the original one, as it is not so strong and with a straight handle, the scoop more flat and of different size, in order to change the instrument according to the extension and depth of the tissue to be removed. It is applied everywhere where extensive parts have to be removed. Small pathological forms, diffusely imbedded in normal tissue, are not suitable for it. It is peculiarly suitable for neoplasms on the surface of the skin, as in lupus vulgaris, lupus erythematodes, and epitheliomata; the latter are more easily operated upon, next to it lupus vulgaris, more difficult lupus erythematodes. The scraping must be continued as long as there is something to be removed, inasmuch as normal texture offers a far greater resistance than pathological ones; morbid plasmata give a gnashing sound which ceases as soon as one touches normal tissue. In removing epitheliomata it is necessary to scrape pretty roughly the hard edges, as relapses begin there, and it may be recommended to repeat the operation on two successive days. On account of a severe hæmorrhage it may be necessary to interrupt the operation, but the pressure of lint will mostly check the bleeding. The pain is severe, but never to such a degree as after lapis and ceases with the scraping; if the operation is well borne we hardly meet a reaction (wound fever). After two or three days the wound is covered with a thin yellowish membrane, which might be taken for diphtheritic, and which arises from necrosis of tissue-particles squeezed during the scraping and not entirely removed. After further three to four days this membrane falls off, and we see a bright-red wound with good granulations. Where we scrape sufficiently any other cauterization is superfluous, and finally a smooth, soft, and pink scar is formed, a far nicer one than after cauterization. We recommend this method for the face and in the neighborhood of joints in order to preserve their function, which is always more or less injured by cauterizing a lupus vulgaris with Chloride of zinc paste.

Hebra divides other cutaneous diseases, to be treated with the scraping

method, in two classes (1), in such with morbid epidermis, and (2), where the epidermis is normal and uninjured. In the former the scraping process alone suffices, and to this class belongs *eczema*, circumscribed and forming a highly raised infiltration over the level of the skin. The *callus after post-mortem examination* (the tubercle from cadavers) on the fingers and hands of anatomists, butchers, dealers in leather, in general of persons who are much occupied with dead animal substance. This state, based on simultaneous neoplastic and chronic detrition, resists every treatment not energetically carried out, and was formerly treated with emplastrum Hydrargyri, Kali causticum, or acids, and layer after layer had to be removed in order to keep off any disfiguring cicatrix; now with one operation we remove the neoplasma and the cicatrix is smooth and soft. In *psoriasis* we may prevent the growth of the efflorescence at the start by removing them with the sharp-edged spoon; we hear the gnashing clearly, but the scraping fails to prevent local relapses. In *syccosis* with papillary proliferations and numerous pustulæ we shorten the treatment considerably by this process; the deeply lying pus is discharged and the inflammatory symptoms disappear. After a severe course of *variola* we meet the skin of the forehead and nose not only disfigured by scars but also by many dilated sebaceous glands, a condition from which sometimes lupus erythematodes arises and which resists treatment. Ablution with *Sapo viridis* gives only a transient amelioration, whereas the scraping of the affected parts is radical. It may also be recommended in *acne vulgaris* and *rosacea*, as by the scraping we open a way for the discharge of the pus. *Ulcers*, especially the *ulcera cruris* of varicose origin, and the scrofulous ulcers with suppurating lymphatic glands, are thus successfully treated. In the scrofulous purulent adenitis a part of the healthy skin may be sometimes preserved by making artificially an opening, and through that scraping out the walls of the gland.

In the second class with uninjured epidermis we mention *nævi*, *nævus verrucosus*, and pigment-spots. Small ones may be removed at once; in larger ones several operations are necessary, as this is less irritating and the scar is more similar to the skin, as when we remove large pieces at once. In the removal of *vitiligoïda plana*, *xanthoma palpebrarum*, we cut with scissors the epidermis at a corner, enter the scoop before the neoplasma, and lift it easily and without bleeding from its base. Even a *teleangiectasia* on the neck of a woman was tried; fearing a severe hæmorrhage styptica were kept ready, but the bleeding did not amount to much. The operation was successful. In *venereal and syphilitic affections* the scraping spoon does good service. In *acuminated condylomata* we either cut off too much or too little; the former gives too large a loss of substance; when too little is cut off it grows again. By scraping we remove the *verruca* with the roots. On account of the bleeding the liquor ferri sesquichlor. may be necessary. *Broad syphilitic condylomata* are thus removed with far less pain.—*Wien. Med. Wochenschrift*, 51, 1875.

*Ischias*.—Dr. Landouzy carefully examined twenty-five cases of ischias, and found that this disease is more frequently complicated by muscular dystrophy than is usually supposed. The cause of it is neither the long duration and intensity of the affection, nor can it be explained by the immobility of the

extremity or by reflex action, but it may be affirmed that in some cases a suppression of the influence takes place which the spinal cord normally exercises over the nerves and muscles. Patients suffering from ischias with muscular atrophy (dystrophy) offer in their pains more the picture of a subacute neuritis; whereas those without that atrophy give, by the periodical appearance of the intensity of the pain, rather the picture of a true neuralgia. In the former case we deal with material changes in the nerves, caused by cold, compression, or adjacent inflammation, as found also in other cases of neuritis. The sciatic nerve, by its position and size, must be often liable to neuritis. We must, therefore, differentiate between ischias vera and neuritis nervi ischiatici. Where the trunk of this nerve is very painful to the touch we may consider it a neuritic disease. Where trophic disturbances, as muscular atrophy, thickening of the skin, œdema, and zona are added, the diagnosis of neuritis is safe.—*Arch. G n rales*, Ser. vi, xxv, 1875.

*Purpura Variolosa*.—Dr. Morf observed, during an epidemic of small-pox at Crefeld, on the Rhine, several cases which showed, during the prodromal stage, symptoms simulating typhus. The patients were at once taken down with an extraordinary degree of general malaise, complained of furious headache, total loss of appetite, and sopor soon set in. The temperature rose quickly to 41° and 42°, pulse 132 per minute, tongue dry and covered with black crusts; during the second, sometimes even during the first day, epistaxis set in, the blood was of a cherry-red, thin, fluid, with no tendency to coagulation, and tamponing failed to give any relief. On the fourth or fifth day a copious exanthema appeared in the pelvic region, covering the whole abdomen, looking like petechiæ, and never rising above the level of the skin. Coma and prostration kept steadily increasing, and all these patients died in collapse on the fifth or sixth day. The autopsies showed a remarkable similarity to the state of persons who died from scorbutus. The veins, when cut through, discharged copiously a watery, cherry-red blood; the pleural cavities contained a small quantity of bloody, serous fluid, numerous ecchymosis on the pleura costalis and pulmonalis; the heart relaxed; in the arteries and ventricles thin, fluid blood, without coagula; ecchymosis on the peri- and endocardium; ecchymosis on the intestines from the extravasation of blood from the bloodvessels; on the kidneys catarrhal manifestations, with ecchymosis on the renal pelvis; the bladder filled with a muddy, bloody fluid.—*Aertz Int. Blatt.*, 8, 1876.

*On the Application of India-rubber Cloth in Cutaneous Diseases*.—Prof. Pick, of Prague, favors the use of it in all processes where the skin is very dry, as it prevents evaporation. This dryness is especially noticed in all diseases with excessive formation of epidermis, as in psoriasis, ichthyosis, keratosis, and in eczema squamosum. Such a covering prolongs the life of the young epidermic cells. Such a procedure may also be applied simultaneously with other treatment, as inunctions with tar, which may be done in the evening; the tar is washed off in the morning, and the affected parts covered with the india-rubber. In some forms of psoriasis the india-rubber clothing alone suffices. The same beneficial effect has been witnessed in all diseases based on a dimin-

ished sebaceous secretion. In such states, the xeroderma, a chronic urticaria appears, soon passing over into prurigo. By preventing the xeroderma, we also prevent the consequent prurigo, so often resisting all treatment.—*Allg. Med. Centziet.*, 9, 1876.

*Differential Diagnosis between Typhus and Primary Infectious Osteomyelitis, by Prof. H. Senator.*—A girl of fifteen years was brought to the Augusta Hospital, at Berlin, apparently suffering from a typhoid state. The diagnosis was at first on account of the high fever, disturbed consciousness, swelling of spleen, diarrhœa, and borborygmi, bronchial catarrh, and decubitus, made as abdominal typhus. All symptoms pointed to such a state; only roseola was either absent or had already passed off, for the decubitus proved that the disease was in an advanced state. As she complained of pains in the right foot since entering the hospital, and as she passed during her stay in the hospital through a bilateral pleurisy, and as pericarditis is rare in abdominal typhus, we began to doubt the correctness of the diagnosis, and the autopsy revealed a far advanced osteomyelitis, a primary inflammation of the marrow of the tibia.

Lücke acknowledges that it is difficult to differentiate between the two diseases, and Chassaignac calls it "typhus des membres," or "typhus des os" (typhus of the extremities, bone-typhus).

In some cases the pyæmia, arising from a traumatic cause, shows itself by severe chills, icterus, etc.; in other cases every exquisite symptom may be wanting, and a mistake may especially happen where the primary, infecting, purulent or ichorous focus is hidden away and cannot be examined, and this is especially the case in osteomyelitis, which causes at first only trifling local manifestations, and in later stages consciousness may be so much obfuscated that the patient cannot render a clear account of his sufferings.

Ætiology is, therefore, of the greatest importance, in order to diagnose early pernicious, infectious osteomyelitis. Where, after a trauma or atmospheric change, pain, swelling, or other inflammatory manifestations show themselves in the neighborhood of joints, followed sooner or later by high fever, etc., the diagnosis is not so difficult, and in private practice the anamnesis will always lead us in the right direction; but we must not forget that osteomyelitis may also appear during the course, and in consequence of a genuine typhus, be it abdominalis, exanthematicus, or recurrent, for pathological investigations show that just as in acute infectious diseases the marrow of the bones becomes affected, and Ponfick expressly says, whereas, formerly to explain the osseous affections chronic diseases only were studied, we feel nowadays convinced that acute constitutional diseases play a great part in such affections. Such an acute disease is the typhoid process, especially the abdominal typhus, where we meet considerable changes in the marrow, and clinical observation must decide how far it is the cause of the pains in the extremities. In the course of acute exanthemata, as variola, scarlatina, periostitis, osteomyelitis, and loosening of the epiphyses have been observed in different bones. The cause that osteomyelitis was not more observed in typhus may be found in the slight local manifestations at the beginning,

which are overshadowed by more decided symptoms in other directions. Where the patient succumbs to his typhus at an early stage the examinations of the bones is mostly neglected, and where the affection of the bones is only noticed at a late stage, or when the fever had run its course, it has usually been considered as a sequela, and not as part and parcel of the acute infectious process. Murchison, in his classical work, *A Treatise on Continued Fevers in Great Britain*, mentions necrosis as a sequela of typhoid diseases, especially of abdominal typhus, and adds that *all his typhoid patients, where necrosis appeared, were young persons, the oldest only a girl of sixteen.* This involuntarily reminds us of infectious osteomyelitis, which nearly exclusively belongs to the infantile and juvenile age. Senator candidly acknowledges the difficulty of differentiating these diseases, and that anamnesis, in its widest sense, is here of paramount importance.—*B. K. Wchschrft*, Feb. 1876.

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### Editorial.

*Our Colleges.*—Said a schoolmaster lately to one of his bright scholars: "What do you think on when you enter the schoolhouse?" and the lad replied: "I wish school were out already." We are only children of a larger growth, and when the lecture-season is over, teachers and students are tired out whenever they have done their duty fully and to the best of their ability. It is nowadays a perfect impossibility to repeat the same course of lectures. So many new books appear year after year, so many new ideas broached, so many experiments made and recorded, that it takes all the spare time of the teacher to keep up with these improvements. Let him beware to tread only the old beaten path, or his students may be in advance of the professor.

We have a right, therefore, to expect, that the graduates of every year will go forth into the world better prepared and better instructed than their predecessors were, and it is a good sign of the times, that so many physicians, who have practiced successfully perhaps for years, matriculate anew not only to refresh their memories, but also to carry home with them many valuable suggestions and improvements.

The graded course, pecuniarily a decided loss to every college, gains steadily in the eyes of teachers, students, in fact with the whole profession. Heaven knows, three courses are short enough to become a physician, the arbiter of human life, and, by unanimous consent of all schools, it ought to be made obligatory. Let the third year be entirely devoted to clinics and practical studies, and humanity would be benefited by it. At the medical clinic of the New York College, the gentleman who carried off the prize, Dr. Thomas Wildes, verified nearly every symptom, as found in the case and in the provings, and acknowledged this practical mode as far the best way to become familiar with his *Materia Medica*. Every student ought to be obliged to do it, but they are driven too much yet by the numbers of daily lectures.

But let us not be discouraged. The very success, which has so far crowned the labors of our colleges, will stimulate us to further improvements and to higher scientific aims. We have done well, we intend to do still better, and we hope that the whole profession will aid us in our labors.



## Reviews and Bibliographical Notices.

*Organon of the Art of Healing*, by Samuel Hahnemann, fifth American edition, translated from the fifth German edition, by Conrad Wesselhœft, M D., Boericke & Tafel, 1876.—Thanks, many thanks, my worthy Athenian, for this New Year's gift. No more valuable contribution to our medical literature, clad in the vernacular of this country, could have been presented to our younger colleagues.

In all the British translations veneration for the father of homœopathy went so far, that they conscientiously endeavored to render the translation as literal as possible, and we are happy to find that Wesselhœft struck out for himself and endeavored to render his translation in the English language according to the rules of an English syntax; the work thus runs more smoothly, and the reader knows exactly what every paragraph means. Those who are in the habit of translating scientific articles from German authors, know the difficulties, as constant transpositions are necessary, and Hahnemann's sentences and combinations are too often spread out over pages. Another valuable improvement is, that the footnotes are put at the end of each chapter, and thus no break occurs in the reading. The translator, the publisher, and printer have done their work nobly, and they deserve the thanks of the reading public.

Hahnemann published the *Organon of Rational Medicine*, 1810, sixty-six years ago. From that standpoint the *Organon* must be judged, and our mind must carry us back to the allopathic doctrines, as they were taught sixty-six years ago. Medical knowledge has vastly advanced since then, and such a reformer as Hahnemann was, the Luther of Therapeutics, would have gladly welcomed all improvements, as his far-seeing eye would have detected in many of them a confirmation of his law. Hahnemann and Luther! it needs such grumbling, scolding, fighting characters to make up a reformer; they never wear kid-gloves, and therefore, when they speak of their adversaries, it needs to be taken *cum grano salis*.

Hahnemann lived before his age. Many a theory advanced by him, in years gone by, finds now its full confirmation, and is acknowledged as true by men of all parties. The "Zopf," or what we call "red tape," was too much in vogue in his day, and his restless mind could not brook such old-fashioned notions. Let us look, for example, how unmercifully he speaks of the treatment of lunatics in these bygone days, when every insane patient was considered a wild beast, and treated as such. Hahnemann was one of the first who raised his voice in favor of non-restraint, and who considered mental diseases in reality bodily diseases.

Just so also his psora theory was in advance of the age he lived in. His far-seeing mind only could not find the right name for the right thing, and are we with our different diatheses and dyscrasie any better off? As his *psora miasma* (§ 581, p. 110) has raged for ages, the heredity of chronic morbid

conditions is thus put clearly before our eyes, although Hahnemann fails to discriminate between miasma and contagium, or had Hahnemann a fore-knowledge of our zymosis? But psora has nothing in common with zymotic diseases, although it may change their courses and their characters. Rademacher's and Grauvogl's explanations also fail to clear up the darkness. Oh! that we had a Hahnemann now in our days, and light would soon be shed on that psora theory,\* which has been a stumbling-block to many a student, but the truth of which, if taken in its right sense, cannot be denied.

Hahnemann cheers us on with his "aude sapere," "dare to know, dare to investigate," forward and steadily forward in spite of old fogysim, which would obstruct the way on account of the reverence due to ancient sages! Where would homœopathy be, if Hahnemann would not have investigated and dared to proclaim his conviction? Hahnemann never claimed infallibility, and thus there can be no wrong in differing from him in minor articles. Aude sapere, dare to *investigate even the cause of disease*, and humanity will be the gainer, for it is far better to prevent diseases than to cure them.

S. L.

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*Lectures on Acute Diseases of the Chest, by R. Douglas Hale, M.D., London, 1875.*—If ever we were pleased with a little book (it only treats of four diseases), Hale's four lectures can lay claim to it, and we thank the Doctor for this treat. Hale is not only a thorough homœopathician, and the indications for the different remedies are given with a masterly hand, but like the true physician, he insists upon it that no fact in physiology, histology, pathology, or morbid anatomy, is not of as great value to us as to any other school of medicine.

Here, on this side of the ocean, we hear sometimes lamentations that in Old England homœopathy is on a downward course and in failing health. Such lectures as Dr. Hale delivers are the best answer to these false assertions, and we trust that our friends over the water will sow their seed broadcast over the land and the harvest will be great.

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*Encyclopædia of Materia Medica, by T. F. Allen, M.D. Vol. III. Carlsbad to Cubebs, Boericke & Tafel, 1875.*—C. D. remarked to the Easy Chair lately, that this grand work is so long already before the medical profession, that it would be superfluous to say anything in its praise; to the faithful homœopathician it recommends itself, and we understand that the reviewer as well as the author revise the manuscript together, and thus it goes to the printer in as perfect a form as it is possible for human frailty. Such an undertaking can never be considered finished, but certainly it is by far the best work which ever appeared on homœopathic Materia Medica.

*Carlsbad.*—What pleasant reminiscences that name brings forth to any one who ever visited that pleasant watering-place, and what physician does not

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\* The specific action of Psorinum is the greatest proof of the truth of the psora theory. We have no other remedy which acts so promptly in that causeless debility, where all other remedies leave us in the lurch. How often do we find our best selected remedies fail, when one dose Psorinum commands that latent psora to give way, and many a time without any other aid reconvalescence is established. Though there are several preparations of Psorinum (from scabies, from herpes, etc.), still the provings give the same symptoms, and all act well when rightly indicated.

think immediately on abdominal plethora, malnutrition, diabetes, and many other diseases! Kafka has shown us its value in hepatic diseases, and we only could wish that some of our own indigenous springs would be also proved, and then put in their place in our *Materia Medica*. We consider it the duty of physicians, practicing in the neighborhood of such springs, to devote themselves to the work, and to give us the results of their labors. For several years, by the recommendation of Dr. Hunt, we used *Tarin*, a product of a spring near Louisville, Ky., for scrofulosis, and many a cure in those tedious cutaneous eruptions, based on a scrofulous constitution, has been accomplished by it. Oh, how much work is yet to be done, and how few the laborers!

We are glad that the different preparations of *Chininum* have found their right place in this work. So many of our physicians, from the abuse which it daily suffers from adherents of the old school, have from obstinate prejudice or from pusillanimity, thrown it entirely aside, entirely forgetting that "the whole medical continent is ours," as long as we proscribe according to the rules laid down by Hahnemann. Buchner taught us the value of *Chininum arsenicum*, and such high authority certainly ought to carry some weight with the profession.

Chloral, Chloroform, Chlor, Chromic acid, Coca, *Crotalus cascarella*—names and drugs which have never before appeared in any work of homœopathic *Materia Medica*. Let us be thankful, and encourage, by every means in our power, the author as well as the publishers.

S. L.

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IRVINGTON-ON-HUDSON, N. Y., March 20th, 1876.

DEAR COLLEAGUE: If not too late, please state in the next number of the *North American Journal of Homœopathy*—*apropos* of Dr. Wells's admirable essay of scarlatina, and of Dr. Gilchrist's condemnation of *Ailanthus* as a remedy in that disease—that, in a letter just received from one of our colleagues in South Africa, I find the following paragraph:

"In malignant scarlatina I have used *Ailanthus* with much advantage. The first case in which I prescribed it was that of a little girl four years old. The disease had advanced too far to be within the range of medicinal influence when I resorted to the remedy, and proved fatal.

"Shortly afterwards I was in attendance on a little boy eight years of age, and a member of a markedly scrofulous family. The throat was very much swollen, dark red, almost purple in color; the eruption plentiful, and of a bluish tint. There was also great prostration, and a countenance indicating much distress. *Ailanthus* 1st dec. was administered every half hour. Within six hours amendment had commenced, the oppression was lessened, the eruption grew brighter, and he made a good recovery. Several cases similar to this one occurred to me during the same epidemic. They were treated in the same way, and with equally favorable results."

This valuable remedy, which we owe to Dr. Wells, is better understood and appreciated abroad than at home.

C. D.

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