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THE PATHOLOGY OF DIPHTHERIA, STATUS PRÆSENS*

BY THOMAS E. SATTERTHWAITE, M.D., NEW YORK.

The title of this paper as it has been given me for the purpose of introducing this discussion, intimates that I am to present you with recent facts bearing on the morbid phenomena diphtheria. But it also suggests (and, I think, very properly) that the pathological status is still somewhat uncertain.

In this country, pathology is commonly understood to embrace both pathological anatomy and pathogenesis; the latter includes also the causation of disease. These are all broad subjects. Fortunately, the pathological anatomy of diphtheria affords us little ground for difference of opinion. It has been well studied; and the matter was practically closed some years ago.

But the pathogeny of diphtheria, and with it, as I have said, the etiology (for they cannot be dissaociated) are still under active discussion, though the work of the last few years in Berlin, Paris, New York and Baltimore, has cleared up a number of doubtful points. And the importance of understanding the pathogeny is very great, for if diphtheria is shown to be a contagious disease, propagated by a peculiar bacterium that can be readily recognized and distinguished by the microscope, then we have made a great stride in diagnosis, and can inaugurate both preventive and curative methods in a way that has heretofore been impossible.

I may here premise that the preponderating evidence at hand is to the effect that bacillus known as Lœffler bacillus is the cause of *true, genuine* or *primary* diphtheria; but that there is also a *false* diphtheria which may be called *diphtheroid*, in which the diseased tissues have a bacillus similar in appearance, though without pathogenetic qualities; that diphtheria is a contagious disease (almost wholly so from a bacteriological point of view); that the Lœffler bacilli retain their virulence in a remarkable manner, but they also genetrate a soluble material that has similarly virulent properties; while finally another soluble substance known as an *anti-toxine* can be extracted from the blood of convalescents and immune animals, which may be regarded not only as a protective, but also as a curative agent.

So far as the pathological anatomy of diphtheria is concerned, its main features will now be briefly summarized. The disease is characterized by the formation of a membrane in the upper air passages, the throat, larynx and bronchi, the posterior nares, and sometimes the anterior nares; while any mucous surface in the body can also be attacked, or even the skin, if it has been abraided, as in the case of a sore nipple, or burn. But the mere presence of a membrane does not indicate diphtheria, and even a pathologically diphtheritic inflammation may attack a mucous surface, the conjunctiva, for example, though the patient have no diphtheria. In this connection, it will avoid some misunderstanding if I say that our German friends use the word *diphtheritic* to indicate that an exudation or membrane is attached more or less deeply to the tissues, while, on the other hand, they use the word *croupous* to indicate that it rests *on* the surface, from which it may be separated without affecting the integrity of the underlying parts. These, therefore, are *conventional* terms, but have long been in use on the other side of the water, where, I presume, they will continue to be used for some time to come.

But while the membrane is a characteristic of diphtheria, it is not an essential characteristic, and the exudation on the surface may be catarrhal or serous; or gangrene may replace the membrane. An interesting illustration of this point has recently been given by Concetti†, where an infant was found to have diphtheria bacilli in the mucous of the pharynx, though a membrane was not found until eight days later; and he has on several occasions found these bacilli in slight cases of

*Read before the N.Y. State Medical Society, Feb. 6, 1893.

*My friend, Dr. Theobald Smith, reminds me that there are diphtheritic exudations in hog cholera.

†Concetti, *Centralblatt. f. Bakteriol.*, 19, 1893, p. 629.

pharyngitis, and exceptionally in fatal cases, where no membrane at all developed. Further, bacteriological studies have confirmed the opinions of those pathologists who held that there is no structural difference between the membrane in membranous croup and diphtheritic laryngitis. Personally, I have never been able to see the difference between the two. Whatever name you may choose to give them, the membrane in either case is *attached* at some points and is *free* at others, for reasons that were given many years ago by A. Jacobi. As a rule, it is a fibrinous exudation similar to many others found in other morbid states of the system. But I do not see any objections to the old theory as stated by Oertel,* that some sort of a membrane may be created by necrosis (the so-called *coagulvtion necrosis* or *hyaline change*)† in the superficial layers of the epihelial cells, in some cases; but I must maintain, from my personal knowledge and frequent examinations of microscopic sections of the membrane *in situ* in the larynx and bronchi, that it can be shown to rest sometimes upon the topmost layer of epithelial cells, for I have seen the cilia of the cells beneath the membrane, and quite unaffected by the membrane lying on them.‡

As a rule, diphtheria is first seen either upon the tonsils, the uvula or pharynx, as a "fiery red" inflammation. From these points it spreads to internal parts, attacking this one or that; or several together; or a group or groups of muscles; one branch or several branches of the nervous system; some part of the vascular apparatus or genito-urinary tract. There is no reason to suppose that any part of the system is free from danger. Points of election are the muscles of the soft palate, the constrictors of the pharynx and some of the laryngeal muscles, thus causing regurgitation, imperfect deglutition, or embarrassed speech. Other muscles notably involved are those of the lower extremities, of the neck, and the sphincters. The muscle substance, when affected, exhibits ecchymoses, perhaps degeneration and atrophy. Any portion of the nervous system, and even the brain, may be attacked in several ways. There may also be endocarditis or myocardial change. In a recent case reported by Howard,§ a laborer, 44 years of age, and previously of good health, died after an illness of 24 days, of heart failure. At the autopsy he was found to have had acute ulcerative endocarditis of both the mitral and aortic valves, and degeneration of the myocardium. On the surface of the ulcers were numbers of bacilli, while a thrombus that was stratified and adherent to the ulcerated surfaces was largely composed of bacilli. Similar bacilli were also found in the thrombi of the spleen and kidneys. And yet it is true they had no pathogenic effect when cultivated and inoculated upon guinea pigs and rabbits. But these few negative experiments do not necessarily upset the theory that the disease was diphtheria. For inoculation experiments on animals with the most virulent matter, do not always succeed, and besides, rabbits and guinea pigs are ill-suited with inoculation diphtheritic virus. Death is not uncommon from heart failure, but it is in most instances from acute degeneration of the myocardium. It will then be found that the right ventricle is distended with blood, as also are the venæ cavæ.

If the disease extends down the air passages, and it does so in about one-half the cases in severe epidemics, there will be laryngitis, or bronchitis, and perhaps bronchial pneumonia, with more or or less pulmonary collapse, and effusion of blood and serum. Bronchial pneumonia is not an uncommon cause of death.

Below the diaphragm, all the organs such as liver, spleen and kidneys will show parenchymatous change, if there is profound constitutional disturbance And they will be congested whenever by a pulmonary or cardiac complication the lesser circulation is interfered with. For the rising column of venous blood, unable to get into the lungs, is backed down upon the organs in and adjacent to the abdominal cavity. To return for a moment to the membrane; the larger and thicker it is, the more severe, as a rule, the attack. When it is deeply attached, and separates, it may leave an ulcerated, sloughing or gangrenous base, with more or less infiltration of the underlying parts, and implication of the neighboring lymphatic glands. The preponderating weight of evidence tends to establish the fact that it is at first a local disease,

*Oertel, Ziemmsen's Handbook, Vol. 1, 1874, p. 587.

†Weigert Virchow's Archiv., XXIX., p. 87.

‡Quarterly Jl. of the Post. Grad. Med. Sch. and Hos., No. 1, 1885.

§Howard, W. T., Johns Hopkins' Hosp. Bull., 30, 1893

and that constitutional infection is a secondary affair.

And now, having reviewed our pathological anatomy, let us look into our pathogeny. It will be convenient for me to take up this matter where I first studied it in the years 1874 and 1875, when in conjunction with Dr. Edward Curtis, Pathologist of the N. Y. Board of Health, we made about a couple of hundred experiments on the subject, mainly in the line of Oertel's* work that had been published in 1871. Our report was published in 1877.† In the propositions that we submitted as the result of our work, we laid stress on the belief that "the poisonous quality *(in diphtheria)* inhered in some particulate thing."

It should be stated here that Oertel had described various forms of round and rod-shaped bacteria in the membranes; but thought the former caused the disease. Oertel's work was most elaborate, and had created a profound sensation in medical circles, abroad and here. The work of the next thirteen years, however, resulted in relegating these spherical microzymes to a position of inferior importance, Cornil, the well-known French histologist, insisting that they were identical with the micrococcci of pyæmia. And now the almost universal opinion is that they are in some way connected with suppurating processes.

About ten years ago, Loeffler called attention to a bacillus which he thought existed in the membrane only. It had a length of from 2.5 to 3 micromillitres, and a breadth of from 0.5 to 0.8 micromillimetres. He thought it had no spores, but Babes now claims that he has seen them, and says they are large and bright, and can resist a temperature of 100 C. The bacilli are quite irregular, and do not stain evenly.

Usually they are straight or slightly curved, but sometimes they are dumb-bell shaped. There are three ways of demonstrating them. One by the cover-glass method, that is applicable for bedside or rapid work; by cultures in suitable media; or by inoculations on susceptible animals. It is apart from the purpose of this paper to describe these methods, for they are to be found in all the recent text books on bacteriology.

But there are opportunities for error that are numerous, especially for one who has not been carefully trained in this delicate work. Through faulty technique the bacilli may not be stained, or they may have disappeared from the membrane. Or they may be confounded with several other varieties of bacteria. These chances for error lessen in proportion to one's increase in bacteriological experience, and also as one goes on to culture and inoculation on animals; the latter test being the one on which we should place the most reliance. But how greatly even practical bacteriologists have differed as to the importance of some of these tests, may be gathered from a few facts.

In 1888-'90, Roux and Yersin found the Lœffler bacillus in only seven cases out of forty-three admitted into hospital for diphtheria—16%.

But it is quite apparent that they use the word diphtheria in a loose sense, and that many of the cases were in no respect diphtheritic. But a prominent New York observer‡ in the year 1889, failed entirely to find them in 24 cases; afterwards it appeared that some of the patients had measles and scarlet fever, as complications. But later investigations have tended almost universally to sustain Lœffler, and the same American observer§ just alluded to, in a later paper, embodying the results of newer work, has given in his adhesion to Lœffler's later views.

Three more citations from the best laboratory work in Berlin, Paris and New York, will show how the matter stands to-day.

In 1892, Bajinsky‖ made rapid microscopic cover-glass examinations in 154 cases turned over to him as diphtheria, and found the Lœffler bacillus in 78%.

In the same year, but a little later, Martin,¶ of Paris, also made cover-glass examinations of material from 200 children, sent to hospital with a clinical diagnosis of diphtheria. The Lœffler bacillus was found in 64%. He usually found it at his first examination. But he noted three things: That when the larger bacilli were found, they usual-

*Oertel. *Loc. cit.*

†Curtis and Satterthwaite's Report of Investigations on the Pathogeny of Diphtheria. N. Y., 1877. Published by the *N. Y. Bull. of Health.*

‡Prudden, Am. St. of the Med. Sc. May, 1889, p. 328.

§*Med. Rec.*, April, 1891.

‖Bajnisky, *Berl. Klin. Woch.* Feb., 1892, p. 183.

¶Martin, Annales de l'Institut de Pasteur. May 1, 1892, p. 332.

ly indicated a severe type of the disease; smaller bacilli, a mild form; while smaller bacilli in conjunction with certain streptococci, or chain-bacteria, might indicate a very virulent type.

A recent New York worker* of large experience in bacteriological work, who has furnished us with the latest information on this point, says that out of 159 cases examined, he found the Lœffler bacillus in 54, or 34%. From these three sources, then, we get an approximate idea of the present value of the bed-side test, as viewed from the standpoint of the bacteriologist. He would be apt to find the bacillus in from 34% to 78% of the cases clinically named as diphtheritic. This view tallies with that held by my friend, Dr. R. H. Fitz,† of the Harvard Medical School, and it is evidently a safe and conservative ground to occupy at present.

At the same time my friends, Drs. M. P. Jacobi,† Welch,† of Baltimore, and Theobald Smith,† of Washington, write me that they expect to find the Lœffler bacillus in at least 75% of true diphtheria, while Dr. L. Emmett Holt tells me that he believes "the bacillus will be found in 95% of the cases of true diphtheria," and adds, "in my own hospital cases, it has been found almost invariably at the first examination."

So that a goodly proportion of our ablest men confidently expect to find the Lœffler bacillus in from 75 to 95% of their cases.

But in view of what will appear hereafter, and the recently observed fact that the bacillus will sometimes suddenly disappear out of a membrane, a variation in frequency even between 34 and 95% is quite intelligible; nor does it in any way weaken the position taken by Lœffler that it is, primarily, the cause of *true* diphtheria; though it greatly lessens its value as a diagnostic criterion in any one case. Some points in the life history of the bacillus are now to be noted. At a temperature of 37 C. it will retain its virulence for 7 weeks; in dried membranes it will live for 9 to 14 weeks: it may be potent even if taken from the throat 3 weeks after the cessation of the fever; at 18 to 20 C.; it will grow in some media; at 20 C. in milk. In agar it will survive 7 months; in glycerine it has lived 331 days (Lœffler), and, according to Abel,‡ much longer.

And now as to a newer phase of the bacillus matter: It was at first held that the Lœffler bacillus did not penetrate the tissues except, perhaps, in the immediate vicinity of the membrane. During the year that has just passed, this view has been overthrown. It is true, Davier§ had noted bacilli in the lungs in 1885, and Martin,‖ had seen them in a case of bronchial pneumonia of diphtheritic origin, but Frosch¶ last year found them in internal organs 10 times in 15 examinations.

Now American workers* have established this point conclusively, Abbott and Ghriskey finding the characteristic bacilli in leucocytes aggregated together in and about the mesentery of guinea pigs killed by inoculation over the belly and testicles with pure cultures; Flexner* has been able to confirm *Davier and *Martin's statements; and Howard even found the Lœffler bacilli in and about the mitral and aortic valves of a man who died of heart failure, in connection with ulcerative endocarditis, as I have already stated.

Before concluding this part of our topic which relates to the etiological relation between bacteria and diphtheria, it will be proper to allude to the problematic connection between certain other microzymes and diphtheria. And these are the so-called pyogenic strepto-cocci and staplylo-cocci. Both of these forms are found in the mouths of healthy people, but they appear to be unusually common in the anginas of measles and scarlet fever. Now there is an idea that the contemporaneous association of one or the other of these microzymes with attenuated Lœffler bacilli will produce a virulent form of the disease, that the bacillus alone could not evoke; and the Italian observer Concetti† has gone even so far as to say that though he could produce genuine diphtheria in pigeons, at least, by the inoculation of the Lœffler bacillus, he could do the same by inoculating the pneumo-coccus, strepto-coccus and staplylo-coccus; though, on the whole, the latter gave a more

*Park, *Med. Rec.* July, 1892.
†As communicated to me by letter.

‡Abel, *Centralb. f. Bakteriol.*, 23, 1893.
§Davier, *Thèse de Paris*, 1885.
‖Martin, *Loc. Cit.*
¶Frosch, *Zeitschr. für Hygein*, III., p. 49, 1893.
*John Hopkins' Bull., 30, 1093.
†Concetti, *Centralbl. f. Bakt.*, 19, 1893.

favorable prognosis. It should be stated, however, at this point, that the diphtheria of pigeons appears to be unlike that of the human species.

But now we come to a serious question. From the time that Lœffler first called attention to his bacillus to the present moment, all prominent bacteriologists have found bacilli in various situa tions that were morphologically similar to the Lœffler bacillus, but non-pathogenic. The Paris observers, Roux and Yersin, found this bacillus 15 times in 45 children, that did not have diphtheria, 33%. Among 59 healthy children in a village school, they also found them 26 times in 44 examinations, 59%; in five out of seven cases of measles, 71%.

In 1891 Abbott examined 53 patients with ordinary catarrhal affections of the upper air passages. In 49 he found ordinary bacteria, chiefly the pyogenic micrococci. In four, or 7.5%, he found the non-pathogenic bacillus. But Park in 159 cases appears to have found it only once.

However, the existence of a non-pathogenic bacillus is now generally admitted, but, as will have been noted, American workers have found it so infrequently, that (here at least) it has not been a very disturbing factor in the diagnoses. Now if, as I have said, we should expect to find it in from 75 to 95%, we should also expect it to be absent sometimes, if the report of Tecenas de Montcel* is confirmed, for in 50 cases of true diphtheria he found the bacillus disappeared in 6 or 12%, after the second or third examination.

I cannot here take up a further discussion of the non-pathogenic bacillus, except to say, that in respect to cultures in suitable media, it has a similar growth to the Lœffler bacillus, though the latter develops in 12 hours in the incubator, while the non-pathogenic form takes from 24 to 72 hours. Other differences have been given, but the general impression is, that the differences between the two are in *degree* rather than in *kind*. On the other hand inoculations of the cultures of non-pathogenic bacilli produce no result, unless there is an admixture with other pathogenic microzymes.

Inoculations should be practiced, however, on susceptible animals, of which kittens, puppies and chickens stand in the first rank—and the trachea, duly irritated, should be the point of election. For we have good reason to believe that these lower animals have the same sort of diphtheria as the human species, and that the disease can be contracted from them directly.

But now we are to take up a still more practical phase of the matter. About the time that Lœffler published his earliest views on the bacillus of diphtheria, Dr. Theobald Smith† in conjunction with Dr. Salmon, of Washington, following somewhat in the line of work inaugurated by Gautier, of France, and Selmi, of Bologna, found in the hog cholera virus, not only a special microphyte, but also a peculiar substance elaborated by it, and capable of producing the disease. I had myself anticipated (in my own mind) this discovery, by an experiment conducted as early as 1876 (Mch. 28). In conjunction with Drs. Frank P. Foster, W. F. Cushman, and Wm. H. Lawrence, I had assisted in the inoculation of a heifer with pure vaccine lymph, intimately intermixed with salcylic acid, in the strength of 1 to 250, a strength sufficient to destroy the activity of all bacteria in the mixture. But, notwithstanding this, five pocks appeared in April 4, while on the other hand two out of four of the controlling experiments made with pure lymph on the same animal were failures.‡ Hence in this case the poison could not have resided in any ordinary bacterium.

Now Hankin,§ in 1889, while engaged in the study of anthrax had obtained an albuminoid substance which, inoculated upon susceptible animals, protected them from disease. And in the diphtheritic virus there appears to be an analagous substance, which quickly decomposes and is destroyed at a temperature of about 50 C. It is also insoluble in alcohol. If concentrated and dropped into absolute alcohol, to which a little acetic acid has been added, there will be thrown down a greyish-white flakey deposit, which is soluble in water, but is precipitated again by alcohol. After this precipitate has been dried in a vacuum at 70 C. it forms a snow-white amorphous mass. This substance is now classed as a toxal-bumin. It appears to be derived from the bacteria, though some hold to the idea (without reason, I think,) that it comes

*Tecenas de Montcel, *Prov. Med.*, 21, 1893.

†Smith, Proceedings of the Biol. Soc. of Wash., Vol. III, 1884-6.

‡Curtis & Satterthwaite, Loc. Cit.

§Hankin, *Brit. Med. Jl.*, I. p. 810; *Centralbl. f. Bakt.*, 6, 1889.

from the animal tissues. Recent experiments on this topic by Martin* and others appear to indicate that the toxic power of the albumin is slight, when the culture has an acid reaction; virulent when it is alkaline. The virulence is reduced by exposure to 58 C. for two hours and removed by boiling at 100 C. for twenty minutes.

We now pass on to another step that was made by Behring, an assistant in Koch's laboratory. In 1891-2 he found in the blood of immune animals a something non-bacterial, that neutralized the otherwise toxic products of the Loeffler bacillus. What was it? Behring† held to the idea that the blood serum contained this *anti-toxine*, as it was

About one year ago Drs. Klemensiewitz‡ and Escherich tested the theory by experiments on guinea pigs. They also succeeded in getting some blood from patients convalescing from diphtheria, and extracting the blood serum, found that it arrested the poisonous action of the diphtheritic cultures that had previously been inoculated upon guinea pigs.

But about nine months ago, Kossel§ was, so far as I can learn, the first to test this *anti-toxine* on the human being. During last March and April eleven children were treated. Their ages varied from three to eleven. Four underwent tracheotomy. Of these four, only one died. Of the eleven, nine recovered. These cases were undoubtedly severe ones, but the mortality was light, and in the tracheotomy cases *unusually* light. In the previous year, in the same institution, of 32 cases only eleven survived. Hence a fatality of 65% under ordinary treatment, as compared with 18% under the anti-toxine. So far, then, the results of this new mode of treatment appear to be most encouraging.

Efforts are now being made by Behring‖ to concentrate this blood serum or make an extract of it; while Aronson¶ claims that he has already succeeded in so doing, but has not had sufficient opportunity for testing it. And here the matter rests.

*Martin, Annales de l'Institut de Pasteur, Nov. 1, 1892, p. 335.

†Behring, *Zeitsch. fur. Hygen*, Pa., 12, 1. p. 10.

†Behring, *Deutsch. Med. Woch.*, Jan., 1893.

‡Klemensiewitz, *Centralbl. f. Bakt*, 13, 1893.

§Kossel, *Deutsch Med. Arch.*, April 27, 1893

‖Behring, *Deutsch. Med. Woch.*, June 27, 1893.

¶Aronson, *Deutsch. Med. Woch.*, July, 1893

Now, while we appear to have all the proof that is requisite to place true diphtheria among the contagious diseases, there is a difference of opinion, as to whether it may not also be autochthonous, that is, self-generating, or indeed miasmatic. Gottstein* concludes from his experience, that if 100 susceptible individuals are exposed only 21, or 21% will take it, while in measles 99% would take it, and in scarlet fever 30%. The sources of contagion whether direct or indirect, are held to be, primarily, the membrane as spit up or coughed or sneezed up, and so inspired or swallowed directly or indirectly through the medium of infected garments, or instruments or vessels that have been contaminated, by milk, perhaps even by flowers taken from the coffin of diphtheritics. It is certain also, I think, that several of the domestic species animals suffer from a communiable form of this disease, and that both in them and in mankind it may be propagated from chronic cases or from convalescents after the acute stage has been passed. In this connection Dr. L. Emmett Holt's views are especially interesting and valuable. He writes me: "Diphtheria is certainly much less contagious than measles, scarlet fever or small pox."

"I have personally known of but two physicians contracting the disease from patients. In three cases only have I seen parents or nurse take the disease from children. I believe this to be very rarely the case if proper precautions, such as the regular use of an antiseptic gargle and nasal spray, are employed."

This is the view commonly held by most of our clinicians. In this connection, it should be borne in mind that there is a vast difference in the liability to the reproduction of a disease, according as we view it from the standpoint of the bacteriological laboratory, or our actual every-day experience. Under special conditions, which the experimenter can regulate, he may reproduce a disease like diphtheria in 95% of his laboratory experiments, while in our clinical experiences it may not be reproduced by the ordinary processes of nature in 10%, because the conditions are unfavorable. That so low a percentage as 10 or 20% contract diphtheria after exposure, does not, however, invalidate the theory that it is exclusively caused by contagion. But it indicates that

*Gottstein, *Berl. Klin. Woch.*, 25, 1893.

there are other conditions that govern the propagation of the disease. Some of these we know to be the age of the individual, and the condition of his mucous membranes in the upper air passages, probably in sanitary surroundings, the season of the year, etc. Hence these latter considerations should not be overlooked, even assuming that the disease is (as it may be) wholly contagious.

There appears to be a diversity of opinion as to whether practicing physicians should make cultures, or inoculate animals for the purpose of diagnosis. In this connection I shall quote from Dr. Theobald Smith, of the Bureau of Animal Industry, Washington, D. C. He writes me as follows:

"I think that no practicing physician should attempt the diagnosis. Bacteriology is too complex a subject now. The difficulty would be, not so much in recognizing the bacilli in an acute recent case, as in recognizing and deferentiating the many other forms likely to appear in the cultures. . . . . "

"The difficulties in deferentiating species is becoming greater with every new one described, and any one who has spent much time with any group of bacteria knows of many gradations and variations which are likely to confuse the novice or the occasional microscopist."

Dr. Smith's views are those held by the majority of those most competent to give opinions in the matter, and they maintain that Boards of Health should not attempt to make such experiments *compulsory* on physicians. They maintain that work of this kind should always, if practicable, be done at some bacteriological centre, and then it should be revised by an experienced bacteriologist, if it is to have any practical value. And it is felt that the difficulties of establishing these centres are not unsurmountable.

Certainly both humanity and science call upon us to favor such researches to the full extent of our power as physicians. Still if we are to have the best results in the shortest time, we should endeavor to see that the material falls only into competent hands.

CIMICIFUGA IN MENTAL DEPRESSION.—Dr. G. W. Durga, *Med. Bull.*, says black cohosh is very valuable in symptoms of mental depression occurring in subjects with uterine disorder.

NEURASTHENIA.

BY PROF. G. RAUZIER, OF MONTPELLIER.

Translated from the French, by D. Campbell Meyers, M.D., Toronto.

Neurasthenia is a common disease; according to Blocq, one neurasthenic is seen in every twelve patients in the consultation hall of the Salpêtrière. This proportion seems to us too small, and in a provincial centre relatively quiet we certainly see a much greater number. Neurasthenia, of which traces are found in all ages, appears at the present day with much greater intensity than formerly, owing to our method of living, and to the fierce *struggle for life* of the nineteenth century. This will be the reigning disease of this *fin de siècle*, and it is impossible to foresee what it may reserve for the coming century.

We must, however, guard against exaggerations, and not find neurasthenia everywhere; one might easily mistake in this way for a neurosis, all the good or bad actions of life which had been insufficiently considered; "every individual," it has been humorously said, "who takes wife or tobacco, who is charitable or passionate, is a neurasthenic."

Neurasthenia is met with at all periods of life; it is most frequent in the adult, and is rarely seen in the child. The two sexes pay to it an equal tribute. It is recruited from all classes of society, but affects, perhaps, with greater predilection, the upper classes; the liberal professions furnishing the most notable contingent to it.

Neurasthenia may be defined as the result of nervous exhaustion, all causes capable of depressing the nervous system can be recognized in its origin. The essential condition of its development is excessive fatigue, regarded in its different aspects and various forms. The elementary cause, so to speak, of neurasthenia, says Mathieu, is *over-pressure of the nervous system*, over-pressure with its two fundamental elements—excess of work or excitement, insufficiency of rest and of recuperation. "All the causes of neurasthenia," says Prof. Grasset, "may be traced to excessive fatigue in all its forms, that (alone) is the key to the problem."

Such, for instance, excessive application to study. That is a broad question, very much discussed, at present. Some wish to show it every-

where, others deny it ; a great deal of exaggeration on both sides.

Over-application to study does exist ; it is a frequent cause of neurasthenia, but of a special phase of neurasthenia, particularly studied by Charcot and Keller, under the name of *adolescent headache.*

How is this disease developed by excessive study ? It is not by the number of hours, either of classes or of study. Some students work as long and even longer than their comrades, without suffering from it. It shows itself among those whose ambition, whose future is the dominating idea, who think unceasingly of how to attain the foremost position, of the fellow-student to excel, of the examination to pass, of the special school to which he must be admitted before reaching the stipulated age.

The students who are *dominated* by these ambitions, who *dream* of them, are those who become neurasthenic, *especially* if to this domination is added work difficult of performance, and constant effort is necessary for them to arrive at the same goal, that others more highly gifted, reach easily. How many neurasthenics are developed among young girls who *strive* for their certificates with unwearied tenacity, *either* by failure at an examination, *or* by the practical disillusions which too often follow success.

The same may be said of *professional over-pressure.* I have seen many cases of nervous systems prematurely shattered, especially among officers of the engineers who had risen from the ranks, forcing themselves to complete, better than all others, a work which was easily accomplished by their comrades who had graduated from the Polytechnic School. There, again, it is the difficulty, not the quantity, of the work, that must be blamed.

In a profession so captivating as our own, in which it is said we die of hunger or fatigue, when we do not die of both, some over-work themselves because they take everything so zealously, almost fanatically, dreaming of their patients, speaking of their operations even at table, discussing medical questions even on the promenade ; whilst others, taking events more easily, more quietly, more philosophically, do not over-fatigue themselves, even while doing more work than the others.

There is also *political over-pressure,* which is so frequent at the present time ; it depends entirely on the way in which things are taken. You know one politician, cool, quiet, and intensely practical, who prefers eating chocolates to a day's shooting. He distributes or appropriates offices, becomes stout, and does not over-exert himself. On the other hand, you have as a contrast, the ardent enthusiast, who fritters himself away, night and day, who is rebuffed on all sides, is seldom elected, and utterly exhausts his nervous system. I emphasize this, above all causes, because it is not sufficiently discussed. Many recent tirades on over-pressure and neurasthenia might make one believe that that affection is the disease of over-work ; whence would follow the natural conclusion, that the way to avoid nervous affections would be to do nothing. I wish to reassure those among my *readers* in whom this opinion might, relax the ardor of their work ; let them make themselves easy ; it is not the quantity of work which exhausts, it is the way it is conceived and executed.

Therefore, the true problem to solve for the pedagogic education of the child, is not to make him work to accumulate a number of things in his mind, but to teach him how to work well. The future belongs to those who *know how to work.* Intellectual work, therefore, is not in itself a complete factor of neurasthenia, in order to produce it, it is necessary that to persistent labor different forms of pre-occupation should be joined ; such as the cares of material life, fears of not reaching the desired goal, an exaggerated idea of responsibility, giving way to an excessive and unsatisfied self love, annoyances and deceptions tending to complicate and darken each day's task. Whence the frequency of neurasthenia among speculators, politicians, artists, philosophers, doctors, and also in certain professions, *e.g.,* postal service, where the severity and continuity of the work are not compensated by proportional renumeration.

If the occupation, followed with severity and accompanied by success, cannot be considered as the cause of neurasthenia, on the contrary moral excesses with their pre-occupations suffice in themselves to give rise to nervous affections. Depressive emotions, the effective passions above all, when they are smitten with failure, exhausted by grief, the reverses of fortune, deception of any

kind, each may serve separately as a determining cause. Fear acts powerfully on the nervous system, and frequently becomes, in times of epidemics, a veritable breeding place of nervous affections, which further incumbers the locality or its environs with a nucleus of contagion. The demands of *aristocratic life*, with the multiplicity of "distractions" that it imposes upon the initiated, with the reversal of normal life and habits, with its rivalries, its triumphs and reverses of self love, of which no reflection should pierce through the mask smiling under all circumstances, provides, creates and maintains neurasthenia. Levillain cites another influence enervating and depressing, viz., immoderate indulgence in music, literature, and the theatre. Certainly it is annoying and often prejudicial to be ignorant of what is going on; but this would be, it seems to us, expanding too widely the sphere of neurasthenia, rather than comprehending the nervous stimulation produced by the satisfaction of artistic or literary inclinations.

Abuse of the generative organs (coitus, onanism) has been equally blamed. One finds, it is true, similar excesses in the antecedents of many neurasthenics; but with Lasègue, one may ask, whether they were the cause or the effect, whether like indulgences have produced nervous affection, or rather, constituted its first manifestation. Some authors have especially denounced the abuse of *coitus interruptus*, practiced continuously to avoid the risks of an increase in family. The question of *muscular excesses* is still more open to question. Neurasthenia is rare indeed among inhabitants of the country, in conditions where the muscles work more than the brain, and where out-door life, strengthening and regulating the nervous system, makes the man happier, more contented, and better balanced. On the other hand, the influence of *traumatism* at the present time is undeniable, the nervous shocks produced by trauma, and often out of proportion to the extent of the injury, has sometimes, as a *result*, a mixed nervous affection, partaking both of hysteria and neurasthenia; this is *traumatic neurasthenia*, of which we will treat further in the chapter on Hysteria.

Certain forms of poisoning also appear to play a part; the abuse of tobacco, of tea, of coffee (Krishaber) have been invoked, but it might be well to make some restrictions as to the last two substances and to ask oneself *whether* to lay the blame upon the exciting beverages or the excess of work they were destined to favor. The excessive use of morphine, ether, cocaine, and iodoform, are equally blameworthy; here again, would it not be proper to return to the origin of these abuses.

Several *general affections*, acute or chronic, merit a position in this etiology. Among acute affections we would mention, grippe, typhoid fever and pneumonia; among the chronic conditions, they have included particularly (and recently) syphilis, tuberculosis and the uric diathesis.

In short, certain local diseases, lesions limited to a single organ or part, can as time passes, by simple persistence, and thanks to the constant pro-occupation bestowed upon them, engender neurasthenia. For instance, diseases of the stomach, of the liver (whence the name hypochondria, given by the ancients to certain form of nervousness), of the genito-urinary organs, etc. "In addition to psychical neurasthenia, there is also organic neurasthenia."

But all that is not sufficient; it is not enough that there is excessive fatigue, a poisonous substance or an illness, to have formed preoccupations, or suffered from a wound, to become neurasthenic. One sees individuals whose existence has been one long series of misfortunes or of vices, a career interrupted by fatigues or evils, and who have still escaped neurasthenia; preserving in the midst of their miseries, the equanimity and well-balanced temper of the philosopher, indeed even gaiety. Therefore, something more, which is predisposition, is necessary in order to become the prey of this nervous affection; there must be a previous *failure* of the nervous system, hereditary or acquired, a relative feebleness of the nerve centers which makes it impossible to resist successfully the effect of the causes heretofore enumerated.

It is customary, in short, to seek among the personal or hereditary antecedents of the neurasthenic as among the greater number of nervous diseases, some nervous defect, organic or functional, and it is not rare, on the other hand, to discover associated with neurasthenia some other disease of the nervous system. We will review these facts when we treat of the pathogenesis. Neurasthenia once constituted, one of the causes which contributes most powerfully to its maintenance in many cases, is the influence of the environment, of the

family environment in particular. "This," writes Mathieu "is a hothouse for neurasthenia as well as hysteria. They (these states) are maintained by the compassion, touching and kind of alarmed sympathizers. The patient, more especially if a woman, becomes, half unconsciously a veritable tyrant to those who surround her. All in the house should subordinate themselves, and do so often to her affliction. Here is a pernicious association the medical man must break up to affect a cure. This is what Weir Mitchell understood thoroughly when he proposed medical *isolation*, and the methodical treatment of rebuilding which we will explain hereafter."

It sometimes occurs, from another reason, that the prolonged contact of a neurasthenic impresses his symptoms in turn on another subject predisposed by his surroundings. From this contact, unhappily too frequent, between two subjects destined by duty or occupation to pass their entire lives together, will result a particular form of neurasthenia, in our opinion the most dreaded and most obstinate, double, neurasthenia.

(*To be continued.*)

THE RITE OF CIRCUMCISION AS PRACTICED BY THE HEBREWS OF TO-DAY.

BY J. T. FOTHERINGHAM, B.A., M.D., TORONTO.

The writer recently, in his capacity of accoucheur, was invited to attend the circumcision of a Hebrew infant, and as the operation was done and viewed from a religious standpoint, as a rite rather than a surgical undertaking, some account of it may interest the reader who has not had an opportunity of seeing it. The actual removal of the foreskin was so simple an affair as to call for no comment, but the accessories were novel, and calculated to excite reflections both grave and hilarious. The child was brought down from the lying-in room by the grandmother, an hour or two after seven days had elapsed since its birth, arrayed in its best and whitest, lying lengthwise on a pillow. On surrendering it to the relative who was to hold the child, acting probably as his godfather, she incontinently scuttled up-stairs again to the other women, who, in accordance with old tribal notions, remained out of sight, and had no part nor lot in the case. When the boy was brought into the room by the godfather, who had thrown round his shoulders, after the fashion of the stole, the *talith*, a white silken drape about six feet long and a foot or more in width, with fringed ends, the operator at once began his ceremonial, in the shape of loudly and rudely intoned Hebrew prayers. The operator in these cases, though often, as it seems a rabbi, is not always in holy orders, and in this case was the butcher, who had duly qualified himself for the performance of the rite among the community, by carefully getting up the ritual for the ceremony. He was as poor a type of asepticism as one could find in a day's hunt, a rusty unkempt German Jew, with long hair and beard, and a coat to correspond, and the pervasive insinuating odor of the "great unwashed." His preparations had been made for the arrival of the child. He had drawn up to the window a small table on which the godfather took his seat, holding the child, still lying on the pillow, with its head towards him, and its thighs grasped and held apart, one in each hand. His feet were supported on a kitchen chair set in front of the table. On another chair, within reach, were set the operator's paraphernalia; first, the knife, a short, square-pointed double-edged one, very thin, like a small spatula, evidently accustomed for many generations to its work of making Hebrews, and used of course for nothing else. Then a glass of water, a wine-glass containing a saturated solution of sugar in whisky, in which lay a strip of old linen, a saucerful of coal ashes, a few small squares of old linen for wipes, and a small bag, the size of a marble, filled with sugar and crushed fruit-cake.

After the godfather had taken his place on the table, the operator still uttering loud prayers, which sounded all the more barbaric from the combination of Hebrew guttural and a chronic huskiness of voice, undid the diaper and disclosed the child's penis in a state of erection, induced, doubtless, before he was brought into the room, and meant as a safeguard against too close a shearing off of the prepuce. The foreskin was removed by a sweep of the knife, the mucous membrane rapidly torn and pushed back with the fingers, and the bleeding stump promptly taken into the mouth and vigorously sucked, the blood being expectorated into the saucerful of ashes, and the mouth washed with water from the tumbler.

The vigorous yells of the infant were nipped in

the bud by the introduction into his mouth of the little bag of sweet stuff already mentioned, which served the purpose at first of a gag, and then of a seductive substitute for his maternal organ of solace. Then the strip of linen was taken from the whisky, quickly wrapped round and round the organ, a little whisky poured on, and the diaper pinned up again. Dismounting from the table, the godfather stood and held the child still lying on the pillow, while more prayers were said, and a tumbler of ale brought in, in which the operator thrice dipped his finger and placed it in the child's mouth, afterwards drinking the ale himself in the intervals of his praying. Then he covered the face with one hand for a time, still praying, and during this part of the ritual named the child, after which the ceremony was at an end, and the little one carried off to his mother. The male friends sat down to discuss a refection of various wines and cakes, fruit, etc., and toast the child, the women being still excluded. The operator remained for two hours, as is the rule, to watch against hæmorrhage, for death has been known to result from that cause, and returned every day for a little while to watch his patient.

The details need no comment. They afford a curious instance of the coincidence of ancient clinical experience and modern antisepsis, the wound being practically healed in three days. As for the religious aspect of the performance, it gave food for reflection upon the curious conservatism, so characteristic of the Hebrew race, which has caused the survival, in the face of the most evident evolutionary progress, of a ritual so savage and crude, spiritual certainly by comparison in the days of its origin when the Hebrew race were the only monotheists in the world; but to an onlooker of an Anglo-Saxon community to-day, little advanced, so far as externals are concerned, from the ritual of a fetish-worshipper in Central Africa.

Selected Articles.

THE TREATMENT OF MOVABLE KIDNEY AND ITS RELATION TO HYDRONEPHROSIS.

Though vague allusions may be found in some of the older writers to that condition which we now recognize as movable kidney, it was not until well into this century, when Rayer's work on diseases of the kidney appeared, that this condition was fully described and the symptoms and sgns were pointed out by which it may be recogniized during life.

It is much more recently still that the connection which exists between hydronephrosis and movable kidney has been made clear, if indeed it can be said to be clear even now.

Experiment and clinical observation alike have proved that for the production of that condition which we call hydronephrosis, it is necessary that the obstruction to urinary outflow should be incomplete and partial, whilst the sudden stoppage of any portion of the ureter leads to complete suppression of urine so far as that kidney is concerned, and is speedily followed, if the other kidney be healthy, by its atrophy and almost complete disappearance.

It does not require a very prolonged experience to show that all cases of hydronephrosis do not lead up to, or depend on, movable kidney, and it is equally clear that all cases of movable kidney do not pass on into a condition of hydronephrosis. It is quite sufficient to recall the fact that these two conditions are *often* associated with one another as cause and effect, and to recognize that even in their earliest stages, they should never be dismissed without a thought as to their future progress, and the means which may be taken to arrest it.

It is by no means easy, even in the earlier stages of hydronephrosis, to detect the exact cause or causes which have led to its production, and the difficulty becomes tenfold increased in the later. Some pressure exerted on the corresponding ureter, especially if it has been both prolonged and intermittent, is usually at the bottom of the trouble. Tumors of various kinds can be discovered in many cases. Amongst them may be numbered ovarian cysts, and other growths which press upon the ureter at its lower extremity, either from the inside of the bladder or its exterior. Mr. Henry Morris, some years ago, described an instance in which a villous tumor in the bladder, by engaging the mouth of one of the uteters, gave rise to a hydronephrotic tumor, which intermitted considerably in size from time to time. In the later stages of uterine cancer, it is by no means uncommon to find hydronephrosis commencing in one or other of the kidneys. Such cases, however, rarely call for active treatment, and must be regarded rather as features of pathological interest than of practical importance.

Bands of cicatricial tissue, and abnormally distributed vessels, passing over and compressing the ureter from the outside, and clots of blood or calculi in its interior, are other sources of origin of this affection.

But probably more common than all these causes

and much more insidious often in its onset is movable kidney, an affection which is much more common in women than in men. It is by no means surprising that this should be the case. Their tissues, especially the fasciæ in the neighborhood of the kidney, are thinner and less firmly attached to the surrounding parts. There is a larger deposition of fat in the tissues, and it is more liable to alterations in amount than is the case with the male sex.

The first symptom probably by which attention is drawn to the kidney is pain. The patient will assert that from time to time, especially at the monthly periods, she is seized with an attack of pain, possibly severe or even violent in character, and suspicions of a renal calculus are at once raised in the mind of her medical attendant. But on close examination it will generally be found that these attacks increase in frequency and in severity as well. If they are severe, she may be seized with an agony of pain that is truly excruciating, and which precludes for the time being any possibility of carrying on whatever occupation she may have been engaged in. The pain will perhaps shoot down into the groin, the back of the leg, or along some other branches of the lumbar plexus. An examination of the abdomen on the affected side will probably reveal the kidney exquisitely tender and *slightly* enlarged so as to be easily distinguishable and extremely painful when handled. In the course of an hour or two, the pain may possibly abate somewhat or remain for a while almost equally severe and intense. The abdomen on the affected side usually becomes distended, tense and tympanitic, and seems to point, perhaps, in some cases, to an attack of peritonitis. After a few hours the attack passes off, and is usually succeeded by the passage of some clear urine, which is occasionally tinged with blood.

The following case, which was under my care some years back, in St. Bartholomew's Hospital, well illustrates the class of case which is being referred to. He had suffered from pain in the region of the left kidney for some little time before seeking advice. Latterly, his attacks had become more and more frequent, and were brought on every few days whenever he attempted any unusual exertion. Shortly after he came under my care, he was seized with the premonitory pains of an attack, and within about half an hour of its onset, I had an opportunity of examining his abdomen. He was lying in bed, and his pain was so severe as to give rise to vomiting. On examining the kidney region on the left side, with one hand in the lumbar region and the other on the front of the abdomen, the distended and tender kidney could be easily felt. It appeared to be nearly as large as a cocoanut. Whilst manipulating this mass, it suddenly slipped backwards, and the pain ceased almost in an instant. About a quarter of an hour later he passed a considerable amount of urine, after which he seemed to be perfectly well.

During this patient's stay in hospital several opportunities were obtained of examining the kidney during the early stages of one of his attacks of renal pain, and by careful manipulation it soon became possible to replace the movable organ and cut short the attack. Eventually, the kidney was explored and found to be dilated into a mere shell containing scarcely any secreting substance. It was removed, and the patient made an excellent recovery, and has since been able to follow his employment without let or hindrance. A better example could hardly be afforded of the insidious onset of some of these cases, of the interdependence of movable kidney and hydronephrosis, and of the rapidity with which, in some cases, the secreting substance of the kidney is destroyed.

To diminish, or if possible to obviate, the chance of such destruction is the object to which treatment should be directed. When a kidney is dislocated from its natural position by some violent action, or gradually slips down from the back of the abdomen by imperceptible degrees, it may be that no interference with the ureteric outflow ensues, and it is quite possible for both kidneys to be so movable that they can be made easily to touch one another in the middle line over the front of the spinal column, where they may be felt of normal size and consistency, and yet there may be no symptoms by which their mobility is made patent to their possessor. In such cases, the fact of their mobility is only discovered by an examination of the abdomen for some other purpose. No special treatment is called for in a case of this kind, inasmuch as the kidneys are performing their functions without difficulty. But should the mobility of the kidneys give rise to symptoms of pain, and especially if the pain be violent, we at once have an indication that its excretory function is in jeopardy, and means should be taken for retaining it in its proper situation. It is, as a rule, with those which are the least mobile that the symptoms are most severe. Their tether is a short one, and their bed but a little too large. If once displaced from it their functions are impeded, and, even by the aid of manipulation, it is difficult to replace them in their natural situation. Indeed, oftentimes they are so slightly displaced that it is all but impossible to discover that they are moved out of it. A simple belt with a pad on its inside, placed over the affected organ, will oftentimes, particularly in the slighter cases, retain it in position. If this fails in effecting its purpose, nephroraphy should be performed. It has often been urged against this operation that it fails in effecting its purpose, and that the pains which were regarded as an indication for its per-

formance are as bad afterwards as they were before. It must be admitted that there is some truth in the statement, and that to retain in position a kidney that has been rendered *extremely* mobile, is by no means easy. But it is only when secondary changes in the shape of lengthening of the ureters and renal vessels have occurred that any difficulty of this sort should be experienced. It is no more possible to guarantee the radical cure of wandering kidney, than it is to effect a radical cure of every advanced case of hernia. If cases, however, are taken in time, and treated early in their career, the result is a good one, and the further destruction of the kidney substance by dis tension is arrested. As the early recognition of these cases advances, so will the necessity for the removal of hydronephrotic kidneys diminish.

But there is another side to this picture. Hydronephrosis may precede mobility, and indeed be the active agent in its production. The course of events is in such a case easier to realize. Some obstruction occurs to the ureter, distension of the kidney ensues, which, provided it be gradual enough in its onset and course, will afford the patient no more indication of its occurrence than does the gradual enlargement of the bladder which often supervenes upon enlarged prostate. Once enlarged, the kidney pushes aside its neighboring structures, and becomes loosened in its bed, and if the obstruction be a temporary one, the kidney shrunken to its former dimensions, lies in a larger bed than it has recently occupied. Mobility ensues as a matter of course, and becomes aggravated as time goes on.

The relief of these cases is more difficult. It can only be effected when once the cause of obstruction has been discovered, and dealt with in an appropriate manner.--W. Bruce Clarke, M.B., F.R.C.S., in *Hosp. Gaz.*

OBSERVATIONS ON THE BRAIN OF THE SHEEP IN DISEASES OF THE CENTRAL NERVOUS SYSTEM AND MIND.

The remarkable effect of the thyroid gland in the treatment of myxœdema has naturally stimulated inquiry into the action of other glands and animal structures generally in various morbid conditions of the system. The question was obviously suggested. Might not these organs or their active principles have a similar beneficial action in many organic diseases or functional disorders, particularly such as affected the same structures as those administered, for example, the suprarenal capsule in Addison's disease and the brain in cerebral disease? Greater and more respectful attention was at the same time directed to the observations of Brown-Séquard on the orchitic fluid.

Impressed with the fact that the gastric juice did not impair the action of the thyroid gland or its extract as a remedical agent, it occurred to me to test the effect of brain substance taken into the stomach in some organic and functional diseases of the brain and spinal cord. I was not, however, very sanguine as to the result, for, first, a formed product, like the cerebral tissue, differs materially from a glandular secreting organ, as the thyroid no doubt is; and, secondly, it seemed not unlikely that the soft pulpy material of the brain would be more fully acted on by the digestive secretion of the stomach than the firmer and more resistant constituents of the gland or even than a concentrated fluid extract But, though these objections presented themselves, the fact remained that, notwithstanding the previous preparation of the thyroid and its submission to digestion in the stomach, there appeared to be no material impairment of its curative power in myxœdema, and it was therefore possible that other organized matter, though subjected to similar disintegrating processes, might still be efficacious in morbid states of the body. Influenced by these considerations, it was resolved to test the action of brain taken by the mouth as an aliment.

In all cases the brain of the sheep was used. Arrangements were made with a butcher to have it removed from the head of the animal within an hour or two after it was killed for the market. It was immediately taken to the chemist, who made a glycerine preparation of it, flavoring and coloring it with cinnamon, cochineal, etc. Within twelve hours the medicine, if we may so call it, was ready for being dispensed; it kept quite fresh, when in a cool place, for four or five days. The usual dose prescribed was one teaspoonful thrice daily before meals, but in some cases this was increased to two teaspoonfuls. In no case was sickness or nausea produced when given in the smaller dose; but in one or two patients the stomach was intolerant of the larger quantity, and it was necessary to reduce it. The taste was not unpleasant, and no one complained that it was disagreeable to the palate. Care was taken not to mention the nature of the medicine in the hearing of the patients, lest they should revolt in its use. I have named it myelin, which indicates its nature.

The preparation was administered to six patients in all in the asylum, and five in the Royal Infirmary. The former group included two cases of subacute melanchlolia of an ordinary type, and one of the resistive variety of that disorder; one of simple and one of chronic mania, and one of delusional insanity (paranoia). The infirmary cases consisted of two cases of bulbar paralysis, one of general paralysis, one of chronic myelitis, and one of locomotor ataxy.

Besides noting the effects on the disease of the nervous system, observations were made on the

pulse, temperature, respiration, and general condition. Looking at the results generally in relation to all the cases there was no decided alteration in the bodily state while the myelin was being taken; no doubt two persons gained each about two lbs. in weight, but two others lost about the same amount. In two patients the respiration increased from 18 to 24 per minute, but in the others they were unchanged.

Referring now more particularly to the cases of insanity: in two there was improvement; in four there was no apparent alteration in the mental disorder. The most marked change occurred in the case of resistive melancholia. The patient was a married woman, aged 36, who had been an inmate of the asylum for two years and three months, when this special treatment was commenced. She had not improved, except in her bodily health, which was excellent; mentally she appeared to have sunk into a state of hopeless insanity. She had ceased to speak for at least a year previously, sat with her mouth pursed up, lookingly fixedly on the ground, did no work, and paid no attention to anything going on around. Early during her residence in the asylum the water cap had been applied to her head and water circulated through it at from 110° to 115° F., but this treatment was soon stopped as it did not appear to act beneficially.

On January 6th, 1893, myelin was begun in teaspoonful doses thrice daily before meals. On January 24th the following note was taken: "On the third day after the medicine was commenced, the patient became decidedly more active in mind, and since then the improvement has increased. Thus she now sits down to sew of her own accord, and does anything she is asked to do without pressure. On the third day, also, she began to speak, but only uttered a few words, and after being urged. On the fourth day the myelin was increased to two teaspoonfuls thrice daily. For some days after this she spoke somewhat freely and sensibly in answer to simple questions, but afterwards she got duller and spoke less." On Feburary 8th it was noted that she still spoke occasionally and correctly, but that at other times she was rather obstinate, though she did as she was told without delay. At this date her weight was increased by two lbs. The myelin was continued till June 14th, when it was definitely stopped, and resumed after some days on three occasions. No distinct effect was, however, observed as a result of these intermissions and resumptions, except that latterly she became more excitable. About five weeks after the myelin was last given, the excitability, which had rather increased, culminated in her breaking several panes of glass. Since then she has been calmer, but has once more ceased to talk, though she continues to work, and shake hands with anyone who puts out his hand to her. Considering the case as a whole, it is no doubt clear that patient had fallen back to some extent; still there remains improvement, when her present state is contrasted with what it was before the myelin was commenced.

The other patient, who has improved, is a woman, aged 60. She was admitted on Feb. 10th, 1893, laboring under profound melancholia of thirteen weeks' standing; she refused food and was suicidally disposed. There was also paralysis agitans of the right arm. Treatment of an ordinary kind was carried out till April 1st. There was then a little improvement, but it was not marked. She still required compulsion to take food, and it was necessary to keep her under observation. She was now ordered myelin in teaspoonful doses thrice daily. Under its use there was soon more obvious improvement, as was shown by her no longer requiring compulsion at meals, and by the alleviation of the mental depression. But the earlier rate of improvement was not maintained, and the meylin was stopped on May 6th. Since then her progress has been slow but satisfactory, though she cannot be considered well.

In this case the benefit derived from the myelin is less clear than in the first one, but it is probable that a part of the decided improvement should be ascribed to it. From a prognostic point of view the presence of the shaking palsy is not favorable to complete recovery. In the other cases of mental disease it was not clear that any effect was produced by the medicine, and it was, therefore, discontinued after a few days' trial.

In reference to the second group of patients, those, namely, who suffered from well-marked organic disease of the central nervous system, in only one could it be said that there was definite improvement under the use of the myelin. This was the case of chronic myelitis. The patient's power of walking was markedly improved for some weeks, but this change for the better was not maintained, and he gradually relapsed into his previous condition. No clear alteration, either for the better or the worse, was observable in any of the others.

These, then, are the results of my experience with this preparation. They cannot be said to be either definite or striking. And yet the impression remains on my mind that there is a constitutent in the brain of the sheep, and doubtless also of other animals, which acts as a stimulus to nerve tissue cell and fibre in the human subject in certain morbid states of these structures.

It is probable that more decided beneficial effects will follow the subcutaneous injection of extracts of nerve substance. Indeed, this is claimed for them by several physicians.

But it appears to me to be premature, especially in the case of such a disease as epilepsy, to record "cures" *soon* after this or any other

method of treatment has been adopted. Where there is improvement or apparent recovery, the powerful influence on some minds of the use of a new remedy, especially if there be anything peculiar in its nature, with the consequent reaction on the bodily disease, should always be remembered. When seeking to estimate the value of treatment in any case this should be carefully considered, but more particularly when the morbid change is in the nervous system; not seldom the psychical is really the chief remedial agent. For the most part, the published statements representing the action of injections of the extract and emulsion—for both have been used subcutaneously—have been somewhat vague and general. It is desirable that careful accounts of cases, detailing the condition before and after the treatment, should be recorded, and that where there is improvement a reasonably long time should elapse after the subsidence of the symptoms before the patient is pronounced to have been cured.—Alex Robertson, M.D., in *Br. Med. Jour.*

THE VARIATION IN THE VIRULENCE OF PUERPERAL INFECTION AND THE LOCAL TREATMENT OF PUERPERAL FEVER.

Investigation demonstrates the fact that in the greater number of cases of puerperal infection the endometrium forms the gate through which the infectious micro-organisms and their products are admitted into the system. It is not denied that wounds of the perineum, vagina, or cervix, which have become septic, may produce fever or are occasionally the cause of a general sepsis; but usually the infection remains local in these cases and the septic germs do not travel much beyond the immediate margins of the wound. If the endometrium is the seat of the sepsis, then the micro-organisms rapidly extend their field of devastation, and, easily penetrating the large veins and lymphatics, soon overwhelm the general system. Therefore Bumm concludes that vaginal or perineal wounds are of a subordinate importance in the treatment of puerperal fever, and the efficiency of the therapy depends mainly upon the efficiency of the intra-uterine treatment.

The most brilliant and constant rewards from intra-uterine treatment are observed in puerperal endometritis originating from a decomposition of retained secundines. The rapid decline of the fever after the removal of these putrid masses proves the views of those correct who hold that in these cases the fever is produced through the absorption of the products of decomposition—a putrid intoxication.

The frequency with which chills and temperature elevations succeed the removal of the retained placental remnants led Bumm to precede the operation by a thorough irrigation of the cavum uteri with several quarts of boiled water, thus washing away the soluble products of decomposition, which otherwise might be absorbed by the denuded tissues. Since the introduction of this method these unpleasant disturbances have diminished in frequency. Antiseptic solutions, as bichloride of mercury, lysol, or carbolic acid, were found to possess no advantage over boiled water. If the intra-uterine decomposition has extended over several days the results are less gratifying and lasting. The temperature will soon rise again, the putrid odor of lochia returns, and a microscopical examination of the uterine discharge shows numerous bacilli. The cause of these relapses is the condition of the endometrium; this membrane has become necrotic and harbors myriads of micro-organisms. A simple removal of the decomposing placenta does not suffice in these cases, and a lasting cure is only attained after a thorough curetting of the uterus and tamponade and drainage with iodoform gauze. There may exist simultaneously with the putrid intoxication a septic form of puerperal fever. Then the lochia have a putrid odor, but besides the bacteria of decomposition they also contain streptococci and staphylococci. In these cases the local therapy may prevent the continuous absorption of the putrid material, but the progress of the sepsis continues unaltered.

The author next discusses the septic form of puerperal fever, when septic germs, generally streptococci, invade the organism. The lochia are sero-sanguinolent or sero-purulent, and in the later stages wholly purulent; the quantity is less than in putrid endometritis; its odor is sometimes mawkish. Streptococci are present in variable numbers, proportionate to the severity of the infection.

In these cases the local therapy, according to Bumm's experience, is decidedly unsatisfactory and uncertain, no matter the means employed. The author has disinfected the uterus with every known antiseptic; he has curetted and afterward applied concentrated solution of carbolic acid or iodine, tamponade of the uterus, and intra-uterine suppositories of idoform—in short, all and everything ever advocated was tried, only to find that while in one case improvement followed, the very next one was entirely uninfluenced by the remedies employed. He says that if we meet a case of puerperal fever in the early stages it may be justifiable to resort to intra-uterine treatment; but he expects but seldom any benefit from it, and has seen cases which were decidedly aggravated.

The inconstant results in different cases are due to the variable virulence of the infectious micro-organisms. The highly virulent forms penetrate the tissues with astonishing rapidity and hold the

gained ground with great tenacity. Schimmelbusch publishes experiments in which fresh-made wounds inoculated with streptococci and anthrax bacilli were immediately cleansed with strong disinfecting solutions, yet the animals perished from the infection. Bumm found that virulent streptococci penetrate the tissues at a rate of two centimetres in six hours, and in some experiments they could, after so short a time had elapsed, already be demonstrated in the general circulation.

It must be seen that in such highly virulent infection local treatment must be inert. We are too late; the poison is out of our reach, and a uterine douche has no more potency than would have the painting of a disinfecting solution upon an erysipelatous eruption. If the clinical symptoms show a spreading of the sepsis (pelvo-peritonitis, metastatic abscesses) nothing can be expected from local treatment. Yet, a simple uterine douche is fraught with danger, as new wounds are of necessity made, old ones re-opened, or infectious thrombi may be driven into the general circulation.

If the infectious germs are of low virulence, then the septic process remains localized, causing only a septic endometritis, and with the expulsion of the necrotic decidua the disease has run its course. In these cases the washing-out of the uterus sometimes produces a rapid decline of the fever. But more frequently the course of the disease is uninfluenced by this treatment; the fever continues until the sepsis has localized itself and the necrotic tissues are cast off.

Thus it may be seen that in the truly septic type of puerperal fever local treatment has only a limited field of usefulness, and that intra-uterine manipulations are often accompanied by danger. Bumm has observed serious accidents following intra-uterine treatment, and, aside from sublimate and phenol intoxications, he mentions two cases in which death was undoubtedly due to simple intra-uterine irrigation.

The liberal administration of the ergot of rye is finally warmly praised by the author. The drug is given with the onset of the fever, and continued until the temperature has again become normal. Miscroscopical examinations of septic uteri have shown that the sepsis does not spread uniformly in all directions, but that where the tissues are dense and firmly contracted the germs are absent, while in the loose connective tissue and vascular structures they abound in immense numbers.

Now, supposing two women infected with an equal number of equally virulent cocci, it is undeniable that the woman who has a firmly contracted uterus is less likely to succumb than the one with a large and flaccid organ. In the former the sinuses are obliterated by firm muscular contraction, while in the latter the projecting thrombi and soft, succulent tissues form a nidus in which the cocci grow and travel without hindrance.

That firmly contracted tissues present a mechanical barrier to the spread of sepsis is demonstrated by the relative rarity of puerperal fever in abortion and the great virulence of the sepsis in twin pregnancies. A good illustration and verification of this theory is also observed in cases of erysipelas, in which a strip of adhesive plaster firmly bound around the margin of the eruption forms a neutral zone which the minute foes of destruction cannot transcend.—Baumm, in *Centralb f. Gyn.; Am. Jour. obstets.*

BLOODLESS OPERATION FOR HÆMORRHOIDS.

As hæmorrhoidal diseases of the rectum and anus are very common, and very often lead to very grave disturbances of the whole system, any line of treatment which will relieve or wholly subdue them, without any serious inconvenience or involving danger to life, will be welcomed by the profession.

At the beginning, it may be well to consider for a moment what we understand by the term "hæmorrhoids." From the etymology of the word we expect to find blood-tumors; but in strict truth, in very many cases of so-called hæmorrhoids or piles the vascular system is totally devoid of any implication whatever; the small neoplastic formations which present themselves along the base, annular rim or roof of the anus and rectum, being historically purely adenoid, papillomatous or vegetative. It is important that the anatomical distinction be made clear in this instance; for the treatment about to be commended applies especially, and almost solely, to those anal tumors which are, or were, entirely dependent on a diseased condition of the hæmorrhoidal veins, in other words, those which are of a veinous origin only.

Another important question arises with respect to the relative frequency of these anal varices, designated piles. Are anal varices, dilatation of the veins or those tumor-like formations, either internal or external to the external sphincter, essentially a pathological condition? and, as such, in all cases, does it require active, radical measures for its abolition? Very naturally, our course will be determined largely, in those cases by a definite answer to this question. If piles are all superfluous, neoplastic excrescences, then there can be no question as to our course in all cases.

During the past five years, I have made an examination of a very considerable number of supposed healthy recta on the living; and, in the dead-house, have carefully inspected under good

light a large number on the cadaver. It was found that in both more than fifty per cent. had veinous varices of the rectum. In many of the living, in whom varices of large calibre were numerous and extremely turgid, they never in their lives suffered from piles in any form, that they were aware of. Therefere, it seems to me that the hœmorrhoidal dilatation in man is rather a physiologically degenerative condition, which, in late life, is a source of no inconvenience, but which, at middle age, is often attended by or associated with such complications as to render it a distinct pathological lesion.

This view is further supported by the fact that cutting out, injecting or ligating of sundry hæmorrhoidal masses will not in all cases cure the disease. The varicose state of the upper rectal vessels remains, and nothing is wanted to promote their return but the exciting circumstances which caused their irritation in the beginning.

COMPLICATED HÆMORRHOIDS.

Diseased hæmorrhoids may be divided into three principal classes: (1) inflamed hæmorrhoids, (2) ulcerating hæmorrhoids, (3) bleeding hæmorrhoids.

Besides, we say internal or external, according as they are without, or outside the external sphincter, or internal to it.

When internal medications has not succeeded, and, when palliative, topical applications have failed to afford permanent relief in chronic hæmorrhoids, in their radical treatment by the *bloodless* operation the majority may be cured, or at any rate greatly relieved.

THE ADVANTAGES OF THE BLOODLESS OVER OTHER SURGICAL MEASURES IN TREATMENT.

(1) The operation may be performed with a less number of assistants, and is very simple in its technique.

(2) As there is no division of the tissues, the dangers of infection, of abscess, ulceration and fistula are eliminated.

(3) There is no danger from the immediate loss of blood during operation or of serious secondary hæmorrhage.

In all cases, the evening before operation the patient should have the colon well cleared of all fæcal matter by a brisk purgative.

In the morning, when everything is in readiness, the patient should be given from two to four ounces of whisky, the quantity to be gauged according to previous habits, its effects, etc. After having cleansed, shaved and scrubbed the integuments over the ischio-rectal fossa, we are prepared for the first step in the operation, which is, effective *cocainization*, hypodermically applied. Local analgesia, when practical, is much more preferable to pulmonary anæsthesia. Our patient is more manageable, and there is no spurting of the fæces over the operative field during manipulation.

Cocainization complete, the next and most vital step is complete and thorough *anal dilatation*. Without th s being efficiently carried out, all else is a failure; but, to be painless and safe, it must be gradual and steady, or we shall rupture the muscle and leave our patient incontinent. In chronic, old cases, wherein, owing to malnutrition and interstitial changes in the sphincter, it has parted with its elasticity, laceration is very easy if we do not exercise caution.

Thorough anal dilatation accomplishes two purposes of great importance: First it opens widely the anal portal, and so paralyzes the levator-ani that the lower fourth of the rectum—that part always implicated in hæmorrhoids — prolapses through the open vent, when it can be most minutely inspected and radically treated. This, however, is of minor importance compared with the profound effects which dilatation produces on the rectal disease. It is not material whether the hæmorrhoids belong to the inflamed, intensely itchy or irritable type; this stretching exercises a most salutary influence on them

The third step, in simple hæmorrhoids, will be the separate treatment of each tumor by forcible pressure-massage. Before this is commenced, the entire cluster should be wiped clean and dry, and be then freely mopped with the cocaine solution. Now each hæmorrhoid is separately seized, close to its base, firmly between the tip of the thumb, index and middle fingers; first, put on a moderate but full stretch; then twisted; and finally so completely crushed that it is reduced to a pulp, and none of the investing tunics remain except the mucous membrane and its under stratum of fibrous tissue. When this has been completed the entire mass is again pressed up inside the sphincter, a suppository of opium introduced, a pad and bandage applied, when the patient is returned to bed. An active but painless inflammation follows, and, as a rule, within two or three weeks' absorption and atrophy have so reduced the vascular masses that nothing now remains but their shrunken, diminutive stems

The ulcerative and hæmorrhagic varieties, along with cocainization and dilatation, must have superadded a special therapy appropriate to each.

Since January of this year, 1893, 52 cases of hæmorrhoidal disease have come under my care, in the hospital and outside. Many have come to me who feared anæsthetics, and others who were averse to having any cutting operation perfermed. In all, the permanent results have been eminently satisfactory; and from what previous experience I have had with this procedure, there is no reason to believe that the cures will not be as durable as those effected by other more sanguinary measures,

which are not without danger in themselves, and are sometimes followed by the most lamentable consequences.

Of my late series of cases, 17 were men and but 15 women. Fourteen were cases of simple, chronically inflamed hæmorrhoids, nine ulcerating and itchy, and nine bleeding. Four of the female cases were of the bleeding varieity. Of the ulcerating type, in six of them there was a well-marked tubercular cachexia.—Thomas H. Manley, M.D., in *Boston Med. and Surg. Jour.*

THE ALCOHOL QUESTION FROM THE PHYSICIAN'S STANDPOINT.

Dr. Adolf Strümpel, *Berliner Klinische Wochenschrift*, speaks about alcoholism with the earnestness of one who thoroughly knows his subject. Touching but lightly upon the legal and national economy phases, he recalls the manifold and close connection between alcoholism and crime, clearly shown in the observations of every-day life and endorsed in plain figures of statistics. As a physician he well knows that the relation between alcoholism and crime is often viewed in a false light, as, when both abnormities occur, alcoholism is often the cause of crime, while in reality very often both are only the necessary co ordinated consequences of an hereditary mental tendency, of a psychopathic degeneration.

As to the importance of beer as a source of nourishment, it cannot be denied that the body receives a considerable quantity of nourishment when beer is freely used. But how do the food value and the price of beer compare? In Bavaria a workman receives about four quarts of beer for one mark (twenty-five cents). The four quarts contain, liberally rated, two hundred and forty grammes of carbohydrates and scarcely thirty-two grammes of albumin. But for the same money he receives, if he buys bread, two thousand grammes of carbohydrates and two hundred and fifty grammes of albumin. Therefore, the cheapest beer, considered as a means of nourishment, is about eight times as dear as bread. The showing is worse still if beer is compared with potatoes and beans. Strümpel has known of workingmen who spent one-sixth of their small income upon beer for their personal consumption.

The albumin-sparing action of alcohol, formerly much quoted, has been shown by more exact investigation to be by no means constant. It appears rather that, under like circumstances, there is even a slight increase in the destruction of albumin.

Neither accident nor special scientific inclination led Dr. Strümpel to devote special attention to the alcohol question, but the force of the urgent facts daily apparent to the busy practicing physician.

The present epoch of medicine has rightly been named the etiological. In the diagnosis of the causes of disease physicians now see one of the highest aims of their investigation, because they know that thus alone can the road not only to cure, but to prevention of disease, which is far more important, be prepared.

Those organic changes which Strümpel puts first in considering the baleful effect of alcoholic drinks upon the health are, disease of the heart-muscle and its nervous apparatus, disease of the arteries and of the kidneys. He thinks the frequent occurrence of chronic heart and kidney trouble from continuous use of alcohol is not sufficiently recognized by physicians. Yet these forms of alcoholism are specially important, apart from their frequency, because they are caused not only by the concentrated alcoholic drinks, but especially by continued intemperate use of beer; hence these are seen in much larger classes of population, not only in the poor and mentally feeble classes, but in well-to-do, cultivated classes. Nothing is more false than the idea that alcoholism is lessened when beer crowds out other alcoholic drinks. Under the very mask of an apparently light, palatable, and yet nourishing drink, alcohol has made its baleful entrance into circles which had otherwise remained closed to it.

In the use of beer it is not only the alcohol which is harmful, but the great amount of fluid introduced into the system. Muscular weakness of the heart is specially found among heavy beer drinkers. The great amount of fluid which these men daily impose on their circulation is almost incredible. Even a daily amount of three to four quarts—*i. e.*, eight pounds of fluid above the usual quantity—cannot remain constant without an influence on the heart. But Strümpel knows that, at least in Bavaria, there are persons whose calling exposes them to special temptation to drink, who consume for years almost daily eight to ten quarts—*i. e.*, sixteen to twenty pounds of fluid added to their bodies. It is not difficult to understand that such an added burden to the circulation leads first to hypertrophy and then to a palsy of the heart-muscle. Of course, the great addition of carbohydrates, overloading the blood and tissues with food products, is also harmful.

Kidney diseases are also especially frequent among heavy beer drinkers. Degeneration of the kidney epithelium and contraction of the kidneys are well-known, but acute alcoholic nephritis is less known. It is acute in the sense that here the sum of long-continued chronic poisonous action leads to a severe functional disturbance of the kidney epithelium. The chronic alcoholic nephritis is usually not of a hæmorrhagic nature. It is often accompanied by severe œdema, may lean rapidly

to death, or may become a chronic nephritis. Complete cures appear to be rare.

In closing, Dr. Strümpel calls attention to an interesting group of diseases in whose cause the excessive use of alcoholic drinks plays a large part, even if one still little understood. In addition to the numerous arresting, poisonous actions which destroy the organic cells, there belong also certain influences upon the course of the general process of metabolism, — gout, diabetes mellitus, and obesity.

Strümpel thinks physicians have it in their power to prevent untold misery and save many lives, if they take hold and work earnestly in this cause. The family physician should specially take care to forbid giving alcoholic drinks to children. It is incredible what folly is committed in allowing children such drinks. Strümpel had a child of five years brought to him with alcoholic polyneuritis, who had received a quart of beer daily !— *Hygienic Gazette.*

ERGOT IN THE TREATMENT OF PERIODIC NEURALGIAS.

Dr. William H. Thomson read a paper on this subject, in which he gave the histories of a number of cases of severe periodic neuralgias in which the symptoms were promptly relieved by the use of ergot in large doses. In all of these cases the disease was of long standing, and the usual remedies had been employed, without avail. Dr. Thomson said his method of administering the ergot in migraine was as follows: The fluid extract of the drug is employed, combined with an equal quantity of elixir of cinchona, to obviate its tendency to cause nausea. Two drachms of this mixture is to be taken in water as soon as the premonitory symptoms of the headache are noticed, and the patient is advised to lie down and keep very quiet. If, after an hour, the headache continues, a second similar dose is taken, and then a third in another hour if necessary. As nausea is such a general accompaniment of this affection, it is provided that if either of the doses be vomited, it should then be taken in an enema of two ounces of water. This medication, the speaker said, rarely fails to arrest the attacks, even in long-standing cases, and with a preventative course of intestinal antisepsis in the intervals, the relief from the malady has often proved pernament.

The following is the history of one of the cases reported by Dr. Thomson. The patient was a young man who suffered from headaches beginning at the occiput and extending to the temples; they generally came on about 11 a.m. daily, and gradually grew worse until they reached their acme about 4 o'clock in the afternoon, after which they subsided, without, however, entirely disappearing. His physician failed to check their increasing severity, although on one occasion he administered thirty-grain doses of chloral with thirty grains of potassium bromide every two hours for two doses, with little more effect than a slight drowsiness being produced. The next day, the patient becoming maniacal from the pain, sixty-five grains of chloral, sixty of bromide, and thirty of antiyprin were given within two hours. This caused a profuse sweating and moderate sleep. The third day a consultant was called, who recommended that quinine and Warburg's tincture (which had been tried at the beginning of the treatment) should be resumed in large doses. Accordingly, sixty grains of quinine and two ounces of Warburg's tincture were given in twenty-four hours, with even worse afternoon paroxyms of pain than before. The next day the bromide, antipyrin and chloral were resumed, but no great relief was obtained. At this time he was seen by Dr Thomson, who recommended drachm doses of fluid extract of ergot every hour for three doses, combining the first two doses with ten grains of quinine, and if the stomach rejected either of the doses, that the medicine be given per rectum. Soon after taking the first dose, the patient experienced a good deal of relief; the second dose was vomited, whereupon it was given per rectum, this was soon followed by a complete subsidence of the pain, with profuse perspiration. This medication was repeated for three successive days, with final cure of the headaches. The second ten grains of quinine produced decided symptoms of cinchonism.

Dr. Joseph Collins said that he has recently had occasion to try ergot in several cases. In one case the patient had been given huge doses of Warburg's tincture, quinine, bromide and potassium iodide without any benefit. He was then given ergot, and a marvellous improvement at once followed. This was three months ago, and the man has had no return of the symptoms since. In another case the patient was a lady, aged forty years, who had long been under treatmeut for migraine, the pain being of a boring character and very difficult to relieve. In this case the value of ergot in the treatment of this affection was discovered accidently; it was given to check a menorrhagia, and at the same time it relieved the headaches.

Dr. Thomson, in reply to a question, said our present knowledge is not definite enough to form any idea as to how ergot acts in these cases. He simply gave it as an empirical remedy. Furthermore, his paper refers entirely to neuralgias that are definitely periodical. These are usually very severe, and entirely different from the ordinary intermittent headaches. He referred to the fact that quinine even in small doses, when it is combined with ergot, appears to produce cinchonism much

more quickly than when given alone. In only one of the cases reported was there any antecedent history of malarial infection; in that case the patient simply gave the history of having resided in a malarious district. Very likely there was a malarious element in the other cases of which the nervous symptoms were only manifestations. Dr. Thomson also referred to the fact that intercostal neuralgia is often accompanied by sciatica; also the occurrence of sciatica after pleurisy. The latter combination he has noticed in about twenty cases.—*Bost. Med. and Surg. Jour.*

MEDICAL NOTES.

Antipyrine, Prof. Hare says, aids the elimination of uric acid from the economy.

Cannabis indica, Prof. Hare says, will often be found to be very useful in cases of *Migraine*.

A case of *Scirrhous* or *Atrophic Cancer*, seen only in the latter stages of the disease, should not, Prof. Keen thinks, be interfered with.

As a rule, Prof. Keen says, in every four out of five cases of *Fistula in Ano*, the patient will be found to be tuberculous.

Prof. Parvin thinks that the *Involution of the Sexual Organs* after confinement takes place more rapidly and satisfactorily if the mother nurses her child.

Fifteen to twenty grains of bismuth and one to two grains of carbolic acid administered every hour or two, Prof. Hare says, will be found to generally stop *Reflex Vomiting*.

Cannabis indica, according to Prof. Hare, will be found to be a very useful drug in stopping the *Cough of Phthisis*, and it possesses the advantage over opium in that it is not so depressant to the system in general.

Camphoric acid, according to Prof. Hare, is the best drug that can be used in controlling the *Night-sweats of Phthisis*. It should be taken in doses of twenty to thirty grains, and two or three hours before the time that the sweats generally come on.

Anteflexion of the Uterus, according to Prof. Montgomery, is of most frequent occurrence in women who have never borne children. It is also the displacement which is found of most frequent occurrence in the sterile woman.

The oxalate of cerium, either alone or combined with bismuth, Prof. Hare says, will very often be found to stop *Excessive Vomiting*. Especially has this been found so in such cases as are due to a hyperacidity, or to an irritation of the mucous membrane of the stomach.

Prof. Parvin calls attention to the fact that in opening an *Abscess of the Breast*, the incision should always be made longitudinally and not transversely. For, he says, when the opening is made by a transverse incision, more milk ducts will be destroyed than if the incision had been made longitudinally.—*Coll. and Clin. Rec.*

THE PARASITISM OF CARCINOMA, AS ALSO THE SARCO-, MYXO- AND MICRO-SPORIDIA OF MUSCLE TISSUE.—L. Pfeiffer (*Centralb. f. Bakt. u. Parasitenk.*, Vol. XIV, Nos. 4 and 5, 1893), in an article illustrated by numerous photomicrographs, describes the various parasitic diseases allied to carcinoma as follows:

Three tumors due to sporozoa present, at one stage of their development, the same type of cell as is found in carcinoma. The sporozoa belong to the protozoa, and are related to the infusoria and the amebæ. They are widely distributed, scarcely any animal being free from them. The most important forms are *coccidia*, *sarcosporidia*, *amebasporidia* and *hemosporidia*. The gregarinæ belonging to this class are, as a rule, not pathogenic. The *coccidia* have nothing to do with cancer, for in this tumor the "lasting cyst" (dauercysten) form, which is so constantly seen in the rabbit, is not assumed; nor does the coccidium present the polymorphic adaptability presented by the carcinoma parasite.

The author believes the Meischer's tubes found in the muscle of the hog, and representing the *sarcosporidia*, to be produced by infection from a parasite residing in the kidney of a form of helix. The contents of a Meischer's tube consists of innumerable sickle-shaped bodies, with a large well-stained central nucleus. Examined in filtered human saliva, the sickle-shaped body changes into an ameboid cell, which closely resembles an epithelial cell. If a tube bursts *in situ*, a tumor is likely to form, which bears an appearance almost identical with cancer. Inoculation of rabbits leads to severe hæmorrhagic inflammation. The hypodermatic injection of a glycerine extract of a large quantity of the sickles induces toxic symptoms—fever, collapse, convulsions, death. In this connection it is to be remembered that in malaria the chill occurs as the same time as the escape of the young amebæ from the red blood corpuscles.

Microsporidia are found in the calf and belly muscles of the marsh tortoise. The rupture of one of the cysts formed by these organisms does not set free a large number of embryos, but a single ameba. The microsporidia are also the cause of the dreaded silkworm disease *pebrine*.

The *myxosporidia* have a complicated structure. Primarily, the spore consists of a bivalve envelope in one end of which are found two "polar cap-

sules," which stain readily. With proper stains a filamentous process can be seen springing from these polar capsules. Furthermore, the spore contains a protoplasm not easily stained, which forms a mass, which passes out as a free ameba when the spore bursts.

The proliferation of the sporidia is accompanied by budding of the muscles in the invaded area, and a disappearance of newly formed muscle cells. At one period of the process the parasites have the appearance of epithelial cells. In the hog the tumors produced by the parasites do not attain a large size, but in the horse may become as large as the fist. The tumor grows at the expense of the newly-formed muscle tissue, which the author thinks is produced by a peculiar irritation set up by the parasite. The parasite consumes the new muscle cells, and takes their place in the tissues. The fact that there are undoubted parasitic tumors in which the epithelial cell is a parasite, makes it improper to regard an accumulation of epithelial cells in an abnormal situation as a criterion of cancer. The cancer parasite is probably allied to the sporozoa, and probably most akin to the group of *amebasporidia* established by Schneider.—*Univ. Med. Mag.*

"Blue Blooded Aristocracy."—There are a great many expressions in our language, and in every language, that seem to have no meaning. One wonders why, generation after generation, people keep repeating them, everybody at the same time wondering how they came into existence. It has been the delight of antiquarians delving in the musty records of the past, to hunt out some custom or fact that throws light at once upon the life of the past and fixes in the minds of the present a luminous explanation of the origin of some philologic curiosity. Sometimes the explanation is not forthcoming, because, lying so near at hand, it cannot be found by antiquarians. There is one such expression that by its very name implies a physiologic or pathologic origin, and yet, so far as we know, has never been explained or sought to be explained as due to any physiologic cause. This phrase, "blue blood," as applied to aristocratic folk, seems a palpable absurdity, because, physiologically, of course, the constituents and color of the blood of aristocrats cannot differ much from that of working and plebeian people. How, then, did it come into use?

Every oculist of any alertness and closeness of observation-powers must have daily noticed, as school-imprisoned and behoused patients come into his office, the fact that in women, girls, and children, severe and long-continued eye-strain produces leanness and pallor of the temples, with the blue veins plainly visible at ten feet distance. Sometimes these blue lines of the temples—as indicative of eye-strain as those of the gums are of lead-poisoning—curl down beneath the eye and along the cheek. Every oculist must have also noticed how soon after getting proper spectacles the temples fill out, the blue lines disappear, and the whole expression of the eyes and face changes. Pain, suffering, malnutrition, at once disappear. The appetite, especially for breakfast, long lost, returns, sleep is quiet and refreshing, and growth recommences. A tremendous difficulty has been overcome and life, as it were, is again resumed.

In the Middle Ages especially, but also in modern times, women, girls, and children of the upper classes have been housed more than the men and older boys. This housing necessitates continuous employment with books, sewing, or other ocular labor at near range. The ametropia that with out-of doors living can be borne by the compensatory powers of the organism, cannot be endured when there is added the extra burden (and, evolutionally, the abnormal function) of continuous accommodation or work at near range. Hence anæmia, the pallid skin, the "pinched eyes," the blue or the swollen veins of the temples, blue circles about the eyes, etc. Heredity of these abnormal eyes—a most common fact—coupled with the inherited subnormality of general nutrition that results both from the ametropia and the lack of physical exercise, does the rest of the work, and the daughters and wives of the castle-owners and of the rich are at once seen to be "blue-blooded." But the explanation shows the fact to be a sign of disease and a thing to be ashamed of, not, by any means, one to be proud of.—*Med. News.*

A New Treatment of Mammary Abscess.—Tweedy adopts Weber's method of treating mammary abscess. An early and free incision is made in the breast, radiating from the nipple, and situated at the most dependent part of the abscess. The finger is then inserted into the wound, and the gland structure broken down. This manipulation, it is stated, will have no bad effect on the healthy tissue. By this process several new cavities will be found, and these, in turn, are to be opened by an incision similar to the first, and the whole thoroughly douched with some antiseptic solution. The membrane lining the several cavities is to be curetted, and the debris removed by a second douching. Strips of gauze sufficient to fill every interstice of the abscess are to be steeped in a one per cent. solution of carbolic acid, and inserted by means of a long sinus forceps and probe. A large flat sponge is then placed on the breast, and tightly bandaged thereto for twenty-four hours. After this period the dressings are removed, and without further irrigation the cavities are again packed, the sponge and bandage being reapplied as before. On the third day process is repeated. In the fourth dressing the gauze packing is dispensed with and the incisions are

drawn together and dressed antiseptically; the sponge and bandage are reapplied. This last process is repeated every twenty-four hours until healing is complete; this usually takes place about the tenth day. In one of the author's cases the whole process was accomplished without the aid of anæsthesia. In only one of his cases was it necessary to make a second incision. The incisions are never longer than is necessary to admit a finger. Iodoform gauze should be used for packing the wounds. The author only having treated five cases, cannot say definitely what portion of the above treatment is essential, but he is strongly inclined to the opinion that curetting can be safely dispensed with.—*Med. Press and Circular.*

THE TREATMENT OF ECLAMPSIA.—From a new study of this important subject Dr. Charpentier, of Paris, has been led to draw the following conclusions: As every albuminuric pregnant woman is liable to eclampsia, and as milk diet gives such marvellous results in albuminuria, and especially in the albuminuria of pregnancy, one should examine with the greatest care the urine of all pregnant women; and if albumin be found in no matter how small a quantity, milk diet, absolute and exclusive, should be instituted at once. This is the best prophylactic treatment of eclampsia. 2. Given a case of eclampsia, if the patient is strong and vigorous and much cyanosed, begin by bleeding to the extent of 400 to 500 grams. Then administer chloral, at the same time getting the patient to begin on milk as soon as possible. 3. If the patient is delicate, and the cyanosis less marked and the attacks less frequent, tne treatment should be limited to chloral. 4. Wait for labor to come on of itself, and allow it to terminate spontaneously, whenever possible. 5. Cases of tardy labor due to uterine atony should be terminated by the forceps or version, if the child be still living; or by cephalotripsy, basiotripsy, or cranioclasis, if dead. 6. Wait before any such interference until the maternal parts are in such condition that it can be done without violence, and therefore without danger to the mother, viz., until complete dilatation of the cervix. 7. Reserve induced labor for the exceptional cases in which treatment by drugs has wholly failed. 8. Cæsarian section, accouchement forcé, and above all, accouchement forcé with deep incisions of the cervix, are to be rejected absolutely.—*Archives de Tocologie.*

THE OPIUM TREATMENT OF EPILEPSY.—This treatment was suggested by Dr. Paul Flechsig, and I have been using it in my clinic since last spring, in some cases with surprisingly good results. I have already told about it in the details of the method. I present to you to-day two patients showing its good effects.

I.—This patient is a man twenty-three years old, and has had fits for nine years. The fits are general epileptic convulsions of a physical kind, and he used to have four or five a month. He was brought to Charity Hospital last April in status epilepticus. He was put by Dr. Collins on extract of opium, increased to fifteen grains a day, for six weeks, and then on bromide thirty grains four times a day. Under this treatment he went from June until last Saturday without any fits. He has just gone four or five days withous medicine and had a fit Saturday. His general condition is very good, and he is vastly better than he has been for years.

II. — Here is another case on which I have used the opium treatment. The patient is a colored girl fourteen years old who has had epileptic fits of the *hautmal* type for four years. She has had as many as a dozen fits a day. The previous treatment before the opium treatment is not known. She was put on this treatment by Dr. Collins for six weeks and then was put on bromide and has had no more fits.—*The Post Graduate.*

THE PROPER HOURS OF SLEEP.—Man in common with most of the animal creation, has accepted the plain suggestion of nature that the approach of night should imply a cessation of effort. If he ignores this principle, his work is done against inherited habit, and, so far, with additional fatigue. It follows, too, that he must use artificial light and sustain its combustion at the cost of his own atmosphere. Naturally, therefore, when he does rest, his relief is not proportioned to his weariness. As in many cases, however, sensation is not here the most reliable guide to judicious practice. Established custom affords a far truer indication of the method most compatible with healthy existence. The case of the over-worked and the invalid lends but a deceptive color to the argument of the daylight sleeper. In them excessive waste of tissue must be made good, and sleep, always too scanty, is at any time useful for this purpose. For the healthy majority, however, the old custom of early rest and early waking is certain to prove in future—as returns of longevity and common experience alike show that it has proved in the past—most conducive to health and active life.—*London Lancet.*

SOME CHARACTERISTICS.—If patient has head always turned to one side, *cina;* if patient sleeps with the knees apart *cham.*, and *platina* if occasioned by extreme genital soreness. If patient sleeps with legs stretched out to full length, *puls.* and *rhus;* if patients bend their heads forward, *sta hisagria*, and if backward, *hyoscyamus;* if patients lie with hands on the belly, *puls.;* if patient sleeps with one leg drawn up and the other stretched out, *stannum;* if patient dreads to

go to bed because bones will then feel as if loaded down with lead, *lachesis;* if patient has enlarged pupils, think of *bell.*, if contracted, *opium;* if patient has one pupil larger than the other, *gels;* if patient has phthisis, there will be retraction of the corners of the mouth in the last stages. If patient gags or vomits at the thought of food, *colchicum;* if patient has hot pale cheek, and a cold red cheek, *moschus;* if patient in confinement "cusses" you, spits in your face, and pulls your whisker, *cham;* if patient is a baby, sleeping all day and crying all night, *lycop.;* if patient has cracking in ears when riding or talking loud, *aloes;* if when eating, *nitric acid.*—Dr. Frank Kraft, in *Am. Hom; Hahneman. Monthly.*

Self-Multilation in China.—The *Medical Press* gives the following account of a curious custom which only the ancestral worship of China could account for:

"The dearest hope known to an elderly Chinaman is to have descendants, and the main reason of this appears to be that when he comes to die his last days may be cheered by the conviction that he has left a goodly following of his own flesh and blood to worship, as is the custom in China, at his grave. But even the calculations of the "Heathen Chinee" are, in this respect, sometimes prone to be wofully thrown out of gear by a concatenation of circumstances, the occurrence of which could not have been foreseen. Of course, the Chinese father relies on his sons to propagate the race, and when there is only one son left upon whom this responsible duty devolves, it is obvious that much should be made of him. Facts go to show that sons are fully aware of the important position which in this particnlar they fill in the domestic circle, and consequently they expect and demand a full measure of consideration and regard from their male progenitors. Should it happen, however, that any serious quarrel arises between father and son, the son has it in his power to revenge himself to an extent which is absolutely unknown in the more civilized communities. Probably no one but a Chinaman could understand the anguish of a Celestial father who suddenly learned one day that his only son had by one swoop of a razor relieved himself of his penis and testicles! But this is the mode of relataliation which aggrieved Chinese sons adopt towards fathers who offend them. Dr. Coltman, of Pekin, has just recorded two cases in which, for the reason mentioned, the sons made a clean sweep of their generative organs.—*Bost. Med. and Surg. Jour.*

Caution to Anæsthetizers.—During a recent clinic by Prof. Hunter McGuire in the new amphitheatre of the College of Physicians and Surgeons, Richmond, Va., while chloroform was being administered to a patient on whom excision of portions of the bones of the leg was about to be performed, the patient suddenly stopped breathing, the face became purple, etc., while the heart continued to beat. In a moment, Dr. McGuire recognized that the condition was due to the dropping back of the tongue, obstructing breathing. With thumbs behind the rami of the inferior maxilla, he pushed that bone forward, thus lifting up the tongue, and the patient at once began breathing easily, and was kept thoroughly under the anæsthetic for the time necessary for the operation. While this procedure is not, by any means, a new one, it is worth while to record such incidents so as to keep the surgeon or physician well on his guard so as to act at the moment when by-standers are dazed at the shock of an impending accidental death. In short, in using an anæsthetic, keep your wits about you, and look out for the sudden emergencies.—*Virginia Med. Monthly.*

Hypodermic Injections in Neurasthenia.—Mathieu, *Gaz. d. Hop.*, in reviewing this form of treatment, is inclined to believe that much of its efficacy is due to suggestion similar to the effect of suspension in tabes, and to that of twenty or thirty different medicines in phthitis. He objects strongly to the use of organic liquids, but has not the same objections to the use of saline injections, as they can be employed without danger if proper antiseptic precautions are taken, and if the injections are made sufficiently deep. He thinks that there is no doubt that small transfusions of serum, to the extent of 25, 50, or 100 centimeters of liquid, raise the tone. He has obtained almost miraculous results in neurasthenia with a liquid composed of 4 grammes of phosphate of soda, 2 grammes of chloride of sodium, 20 grammes of neutral glycerine, and 80 grammes of water, but he does not attribute any specificity to the liquid. Recently, with two centimeters of the fluid, he resuscitated a neurasthenic who was scarcely able to leave his bed; but Mathieu added a strong dose of suggestion to the formula, and believes more in the latter than in the phosphate of soda.—*Brit. Med. Jour.*

The Transmission of the Ovum from the Ovary to the Tube (*Archiv für Gynäkologie*, Band xlv., Heft 2).—Lode first repeated the experiments of Kehrer and Pinner, injecting an emulsion of charcoal into the abdominal cavity of rabbits, and, like these authors, he was able, after a few hours, to demonstrate charcoal particles in the opened tubes. He next substituted ova of animals for the emulsion, using the ova of ascaris lumbricoides suis After a lapse of twelve hours large numbers of these ova could be seen in the dissected tubes. These investigations prove that the ciliary currents can propel the ova, not only from the ovary to the tube, but also from the

abdominal cavity. They show that the fimbriated extremity of the tube need not be in contact with the ovary during the expulsion of the ovum, and that the external migration of the ovum is certainly possible.—*Am. Jour. of Ob.*

A SIGN OF BREECH PRESENTATION.—When, in a woman who has passed the sixth month of pregnancy, a sharp pain is produced by placing the hand on the fundus uteri, it may be almost affirmed that there is a breech presentation. The fact is very frequent, although not constant, being present in about seventy per cent. of cases. The pain is sometimes spontaneous. How is it to be explained? According to Pinard, it is due to the irregular distention produced by the rounded mass of the head. If version is performed, the pain disappears.—*La Clinique Internal.*

AN IMPORTANT OMISSION.—The mothod in which many of our best writers dismiss the treatment of a case with injunctions to give tonics, diuretics, astringents, etc., is excessively confusing and misleading. They should always *name* the tonic, diuretic or astringent which has proved so useful to them, for there are tonics and tonics, astringents and astringents. Some are better than others, some are worse, but none act in identically the same way. Some heart tonics stimulate the heart by accelerating its beat; others by dilating the vessels and lessening its work; some astringents are powerful caustics; others gently contract the tissues and empty the blood vessels, and so on *ad infinitum.*

In reporting cases, always *specify* the remedies which, in your hands, have proved effectual.—*Med. Brief.*

CRUDE PETROLEUM IN VAGINAL INFLAMMATION.—Després (*Gaz. des Hop.*, June 15th) has great belief in petroleum as a dressing. First, he found that it was preferable to coal tar and charcoal in the treatment of scirrhous ulcers of the breast. Then he obtained good results in cases of advanced uterine cancer, by injecting petroleum into the vagina. The foul discharges ceased at once. Now he finds that the same compound answers well for vaginitis. He uses 100 to 150 grammes of pure petroleum for one injection; it is in no sense a caustic. Two or three injections, one dasly, will cure recent vaginitis. The petroieum adheres to the mucous membrane, and soaks into the tissues, so that it acts as a permanent dressing. The patients do not complain of the odor of the compound, and it in no way affects their health.—*Br. Med. Jour.*

"FEVER, unless it be high, requires no special treatment. In urgent cases only ought antipyrin to be given. As a rule, cold applications to the head will act well when there is a tendency to convulsions. Cold applications to the heart will reduce the temperature of the whole body. A warm bath will frequently do good. I do not advise bathing or handling the child much while the convulsion is on. When thirst is very great, small quantities of ice-water should be given often, or seltzer water, or vichy or apollinaris. Also water to which dilute muriatic acid has been added in the proportion of one to three or ten thusand."—A. Jacobi, M.D., in *Times and Reg.*

MEDICAL HINTS.—Many things must be worked out alone in medicine. Practice is but a series of trying positions that must needs require all a man's fortitude.

The physician must preserve a golden mean between his duties and his pleasures; must mingle with his patients socially without losing his dignity as their counsellor; he must command respect as well as admiration. To maintain dignified assurance, without falling into the vauntings of a boaster, constitutes the supreme talent of a physician.

When once the manifold duties and perplexing cares of a successful practice have been incurred, the physician will realize the advantages to be derived from physical strength—organic stamina. The mental anxieties that are the daily and hourly companions of the conscientious physician are a tax upon his strength of which the public knows too little.—*Columbus Med. Jour.*

SALICYLIC ACID AS A VERMIFUGE.—Ozegovsy (*Nav. lek*, March, 1893) is reported by the *Union Medicale*, as strongly recommending the use of salicylic acid as a tenifnge. After a fast of twenty-four hours, the patient is to take at night thirty grams of castor oil. The next morning, at 7 o'clock, again fifteen grams of the oil are administered, followed by one gram of salicylic acid every hour until from eight to twelve doses have been taken. Should the tenia not appear at 1 p.m., another fifteen grams of oil must be taken. The author reports but one failure in twenty cases.—*Med. Rev.*

A. C. E. MIXTURE.—I fully believe it to be as safe an anæsthetic as any, and one by which the dangers of chloroform and the inconveniences of ether are alike avoided.—*Reeves.*

ROSACEA:

R—Ichthyol,	2 parts.
Resorcin,	1 part.
Collod. flex.,	30 parts.

—*Petrinio.*

FOR epithelioma, Morau, *Journ. de Méd. de Paris*, recommends the topical application of a saturated solution of picric acid in water.

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IMMEDIATE TRACHELORRHAPHY.

In a very interesting and useful paper read by Dr. Henry C. Coe, of New York, at the recent meeting of the New York State Medical Society, the author states that he has changed his views regarding the above operation. He was formerly opposed to it, but recent experience has convinced him that under some circumstances it is not only beneficial, but is clearly indicated. On the other hand, he is not fully in accord with those who recommend immediate repair of *every* extensive laceration of the cervix. The ease with which it can be done has been over-rated. It is really a procedure requiring not only a certain amount of special skill and experience, but able assistance. That it will ever become a common operation with the general practitioner is improbable.

There are certain circumstances under which the accoucheur must expect a bilateral laceration of the cervix, especially in delivery of a large head through a rigid, partly dilated cervix, either by forceps or after version. The after-coming head is peculiarly liable to cause this lesion, especially in rapid delivery in *accouchement forcé*. The injury is often practically non-preventable, and is no reproach to the obstetrician. Even when Dührasen's incisions have been made there may be still a deep bilateral tear. If he expects such a tear, the surgeon should be on the look out for it, and should not mistake the resulting hæmorrhage for ordinary post partum bleeding from uterine atony. The profuse flow of light-red blood after the uterus is thoroughly contracted should point to the true site of the bleeding, which is verified by introducing a speculum and rolling out the cervix so that it can be thoroughly inspected. Under ordinary circumstances the bleeding can be controlled by introducing a plug of gauze into the cervix and holding it with one hand while the other compresses the fundus uteri; but occasionally this treatment is unavailing and valuable time would be lost in making persistent efforts to check it in this way, or with hot water. Under these circumstances we should decide at once to introduce sutures.

The object of immediate trachelorrhaphy is threefold, viz: 1. To control hæmorrhage; 2. To lesson the risk of sepsis; 3. To do away with the necessity of a secondary operation.

The accoucheur must be guided in his decision by: 1. The extent of the tear (*i. e.*, bilateral and through the vaginal junction); 2. The condition of the patient, who may be too weak after a difficult delivery to stand the additional manipulation; 3. His own skill; 4. The presence of proper light, instruments and assistants. It should not be forgotten that the most experienced obstetric surgeon may meet with such difficulties as to be obliged to abandon the operation.

Operation—The patient should be anæsthetized if possible. Two assistants are needed, one on each side. With the patient on the back, the operator introduces a large Sims' speculum. The anterior lip is drawn down with a volsella, aided by pressure from above. Locating the exact site of the tear the operator passes a large curved surgical needle (armed with silk-worm, gut or a carrying-thread with silver wire) deeply beneath the angle of the laceration. The suture is tied, but not too tightly, and a second and third passed in the same way, the ends being left somewhat long. This will usually stop the bleeding. The same manœuvre is repeated on the opposite side if necessary. The after-treatment is the same as in an ordinary case of labor, no vaginal douches being given until the end of the puerperal week. Illustrative cases were cited, in which hæmorrhage was so profuse that the patients were in an alarming condition. Union was perfect, so that it would hardly have been supposed that the cervix had been torn.

Contra-indications to immediate trachelorrhaphy —1. Patient so much exhausted by the labor that

it is not desirable so keep her any longer under an anæsthetic; 2. Possibility of septic infection and necessity of free drainage; 3. Such extensive bruising of the parts that the wound would probably not heal. Under these circumstances tampon firmly with gauze and apply pressure over the fundus uteri—the gauze to be removed in twelve to twenty-four hours. Give daily antiseptic douches after the second or third day, under the use of which even extensive tears may heal partially, so that a subsequent operation is not required, and parametritis is prevented.

ELECTRICITY IN NEURALGIA.

To apply electricity for the relief of disease requires a more extensive knowledge of this therapeutic agent than is possessed by the average medical man, and in consequence of this defect in medical education, and also of the time and plant necessary for the proper use of electricity, it is left almost entirely in the hands of two classes of practitioners, the specialist and the charlatan. And yet the pointings of nature for relief from pain by it are often so clear, that it is a pity so few doctors avail themselves of this cleanly, cheap and agreeable means of relieving suffering, one of the most important of the physician's duties.

Idiopathic neuralgia is a *bête noir* to every practising physician. It is so intangible, evades so dexterously in many cases all attempts at finding a satisfactory etiology, is so much in the region of the unknown as regards pathology, and is so distressing to the patient, that no wonder the doctor would rather treat a case of psoriasis than one of so-called idiopathic neuralgia

Now, though we do not know the *rationale* of electricity, still it is unquestionably often attended with great success in the treatment of neuralgia. And our employment of this remedy empirically, is not a whit more reprehensible than our employment of opium to relieve pain, or of iodide of potassium to lessen the lesions, central or peripheral, of syphilis, for in neither case do we know how the desired result is brought about. To relegate electricity, then, to charlatans, is only an evidence that the profession generally do not know as much as they ought to know of the every-day means of application of that remedy, or will not take the time and trouble to use it.

It may be said that, to know all that may be known of the therapeutic uses of electricity, requires a very long and rather expensive training. This is true, but enough may be accomplished by any ordinary doctor, and with not too expensive apparatus, to lift the subject above its present level.

Not only will success follow, in the great majority of cases, the proper application of electricity in neuralgia, not dependent on serious organic lesions, but even the distressing pains dependent upon central structural changes are often greatly lessened.

The "proper application" is the point. It is not to be expected that every physician can be a skilled electrician, but in neuralgia, the question can be so limited as to allow electricity to be used by everyone. Speaking broadly, the neuralgias that one encounters in every-day work fall into two classes. First, those which are relieved by firm pressure over the painful area, and aggravation by superficial or light pressure. These are not true neuralgias, but are more properly spoken of as hysterical hyperæsthesias or pseudo-neuralgias. They are extremely annoying to the patient, and may be treated constitutionally with but little success, while the employment of the faradic current seldom fails to give relief. It is greatly superior to the galvanic current in these cases.

In the true neuralgias, those which are aggravated by pressure, which show the *points douloureux*, hyperæsthesia of the skin and deeper parts both when the attack is present and in the intervals of pain, and the well-defined painful course of the affected nerve and its branches in contradistinction to the *painful areas* of pseudo-neuralgia, the galvanic current is undoubtedly far superior to the faradic. A very little experience with a combined battery, these facts being known, will convince anyone of the great importance of both currents in properly selected cases.

Certainly, they do not cure the disease; that must be left for other agents to accomplish in a greater or less period of time; but the gratitude for the relief of pain brought about will abundantly repay the practitioner for all the trouble and time necessary to the proper application of the agent. In a word. then, when deep pressure

aggravates the pain, use the galvanic current, and when it relieves, use the faradic, a simple rule that is just as scientific when put into practice, as is the use of bromide or arsenic in functional nervous diseases.

THE INTRA-VENOUS INJECTION OF SALINE FLUID.—There can be little doubt, *Ed. Lancet*, that the injection of salt solution into the veins constitutes a valuable addition to our therapeutic measures in certain otherwise hopeless cases. We refer more especially to cases of severe accidental or unavoidable hæmorrhage, to severe cases of post-partum hæmorrhage, as well as to cases of extra-uterine pregnancy where there has been rupture of the sac with profuse intraperitoneal hæmorrhage. It would seem that the injection is also indicated in some cases of severe operation where a large quantity of blood has been lost but less than is needed to prove immediately fatal. In a certain proportion of such cases, although the patient is not pulseless at the end of the operation, death occurs before many hours have elapsed, apparently from secondary syncope. In some cases of the kind, at all events, it appears probable that the injection of salt solution may avert an unfavorable termination. It is certainly a great step in advance to have it established that the injection of actual blood is unnecessary; for so long as blood was required the practical difficulties surrounding the procedure were so great that it has but rarely been employed; and it is in the light of our present knowledge as certain as anything can well be that lives have been lost solely for the want of some ready means of restoring the volume of the circulating fluid. It is evidently of great importance that the method should be a simple one, and especially that it should not involve the possession of some more or less complex apparatus which the ordinary practitioner could not be expected to have at hand. As regards the fluid to be used, the simplest of all—plain water—will do, since successful cases are reported in which water only has been injected; but it is certainly preferable to use a solution of common salt, the proper strength being one teaspoonful of the latter to a pint of water. Here again, while it is no doubt desirable, if circumstances permit, that the solution should be sterilized, it is abundantly clear that it is by no means absolutely essential. A patient should not be allowed to die from loss of blood, where it is practically certain if let alone she would do so, merely on account of an extremely remote risk of septic poisoning from the water in the kitchen kettle and the salt in the table salt-cellar. Then as to the quantity of fluid to be injected. This should depend on the amount of blood that has been lost, and this often cannot be accurately estimated. It is important to note, however, that a few ounces are of little or no use. In cases really requiring this treatment it is a question of injecting pints. From a minimum of two pints in the less severe cases to a maximum of six pints in the worst cases is the amount of salt solution to be used. This should be continued till the pulse can be felt at the wrist. Opinions differ as to the rate at which the fluid should be injected; some consider that a pint in four minutes is not too fast, while others think that the rate of injection should be a third of this or less. Probably the actual state of depletion of the circulation causes the rate at which the injection may be safely made to vary in different cases. The actual apparatus required consists only of a cannula and a few feet of india-rubber tubing connected with a vessel to hold the salt solution. The form of the vessel is immaterial; indeed, the tubing converted into a syphon, may be made to convey the fluid from an ordinary jug. Now that the whole precedure has been so much simplified we may expect to hear of it being more frequently resorted in the coming year. Certainly no patient should be allowed to die from hæmorrhage without an attempt being made to save her by means of the intra-venous injection of salt solution.

SOLAR ELECTROTHERAPY.—In a dark room with alternating currents of 800,000 voltage, Nicola Tesla, by means of atmospheric vibrations, caused a faint glow of light to appear. Explaining the phenomena, he said: "If I can increase the atmospheric vibrations, say 1,000,000 to 10,000,000, I can produce sunlight in this room. Of course, I can increase the vibrations by increasing the voltage. I can make the voltage 8,000,000 as easily as 800,000, but I am not ready to handle 8,000,000 volts of electricity. Currents of such strength would kill everybody in the room. I expect, however, to learn how to control large

voltage. When I have increased the atmospheric vibrations perhaps a thousand times, the phenomena will no longer be electricity. It will be light. I am satisfied that sunlight can be made from electricity without doing harm to anybody, and I expect to discover how it is done."

This experiment and others which we, *Ed. Alienist and Neurologist*, have seen Tesla perform give us an electrical explanation of the value of the sun's rays in neurotherapy. We now have the explanation of the value of the solariums attached to our sanitariums, and of the influence of the sunlight in general on animal and plant life and health. We are reaching a point in the science of electricity and light when it is apparent that other purposes will be assigned to the sun than merely to illumine the earth and to the moon, than merely send forth the sun's paler reflected rays for a light by night. The sun is the great dynamo of our earth which the Master Physician of the Universe employs to promote and maintain the sanitation of the earth's population, animal and vegetable. So it now appears, as Tesla has electrified the scientific world with his electrical glow light, so the sun electrifies us. If light may be correlated into nervous force and nervous force into light, as Brown Séquard conjectures, we are certainly on the verge of a great therapeutic discovery through the discoveries of Tesla and his followers. The volitional phosphorescence of certain animals and the light emitted sometimes from certain sick people are among Brown Séquard proofs, and among Tesla's experiments he emitted from his person a halo like that which is said to have emanated from certain saints of old, only Tesla's halo was in the dark.

OLIVE OIL IN OBSTRUCTIVE JAUNDICE.—Oliver, *Lancet; Am. Jour. Med. Science*, reports two cases of simple obstructive jaundice successfully treated with olive oil. The first patient complained of sudden attacks of severe pain in the upper part of the abdomen, which of late had become more frequent and severe, and had occasionally been attended with vomiting and followed by jaundice. On account of increasing debility the writer finally prescribed olive oil, beginning with one tablespoonful in milk daily and gradually increasing the amount to six tablespoonfuls. With the exception of a slight attack of colic on the second or third day after the treatment with the oil was instituted, the patient had no further pain and no return of jaundice, and is now in better health than he has been for the last five years. Treatment was continued for several weeks after the disappearance of the symptoms, and in addition to the oil he was given two grains of calomel twice a week, and a few drops of extract of cascara sagrada every evening.

The second case, a woman aged 48, had been deeply jaundiced for ten months. The abdomen was retracted and the liver enlarged. She was very feeble and her mind was depressed. As all other remedies had proved futile she was given daily two tablespoonfuls of olive oil in warm milk. Within three weeks the jaundice disappeared, the stools became normal and there was a remarkable improvement in the general condition. The author is unable to give any explanation of the action of the oil in these cases.

TREATMENT OF EPILEPSY.—In the *Liverpool Medico-Chirurgical Journal; Lancet*, Dr. Alexander utters a word of warning against the indiscriminate use of bromides in the case of epilepsy, a warning which, we venture to say, is not unneeded. Nevertheless in the great majority of cases no other drug is so efficacious, and it is only in rare cases that it is completely contra-indicated. Dr. Alexander has observed good results from the combination of borax with the bromides, especially with bromide of sodium. In twenty-six cases in which this combination was administered the fits were arrested for several months in nine cases; in seventeen they were diminished in frequency, while in one the attacks were uninfluenced, and in another they became more frequent. But perhaps the benefits of this treatment are more uniform in regard to the mental condition of the patients. Even in those who were subject to post-epileptic mental disturbance, and in others who remained dull and stupid for several days after a fit, the mental disturbances entirely disappeared. There are, however, certain drawbacks to the administration. The full dose sometimes produces gastric troubles, flatulence, and loss of appetite. But this inconvenience is usually got rid of by care in administering the drug after food, and by caution in increasing the dose gradually. Skin eruptions may also be produced,

especially after continuous administration for some time. These may be accompanied by intolerable itching, but the eruptions are said to subside usually even without discontinuing the use of the drug. Loss of hair, which may be complete, is a much more serious inconvenience. Dr. Alexander's experience seems to confirm that of previous observers in regard to the efficacy of borax in certain cases of epilepsy.

INFECTION.—The period of infectiousness of contagious diseases, according to the State Health Board of Pennsylvania, *Maryland Med. Jour.*, is:

Small-pox—Six weeks from the commencement of the disease, if every scab has fallen off.

Chicken-pox—Three weeks from the commencement of the disease, if every scab has fallen off.

Scarlet Fever—Six weeks from the commencement of the disease, if the peeling has ceased and there is no sore nose.

Diphtheria—Six weeks from the commencement of the disease, if sore throat and other signs of the disease have disappeared.

Measles—Three weeks from the commencement of the disease, if all rash and the cough has ceased.

Mumps—Three weeks from the commencement of the disease, if all swelling has subsided.

Typhus—Four weeks from the commencement of the disease, if strength is re-established.

Typhoid—Six weeks from the commencement of the disease, if strength is re-established.

Whooping Cough—Six weeks from the commencement of the disease, if all cough has ceased.

Under judicious treatment, the period of infectiousness may be considerably shortened, but no child suffering as above should be admitted to any school after a shorter period of absence, and then should be provided with a medical certificate that he or she is not liable to communicate the disease.

Length of quarantine—Teachers or children who have been exposed to infection from any of the following diseases may safely be re-admitted to the school, if they remain in good health (and have taken proper means for disinfection) after the following periods of quarantine:

Diphtheria, 12 days; scarlet fever, 14 days; small-pox, 18 days; measles, 18 days; chicken-pox, 18 days; mumps, 24 days; whooping cough, 21 days.

Adults may be re-admitted immediately, if they disinfect their clothes and persons.

FLIES AND THE DIFFUSION OF PATHOGENIC BACTERIA.—Dr. Simmonds' investigations, *Br. Med. Jour.*, on the transportation of cholera bacilli by flies are of interest, in that they give in the form of a definite experimental observation what has long been almost common knowledge. It is well known that flies that have access to tuberculous sputum take the tubercle bacilli into their intestines. If they are examined histologically some time after, these bacilli may be demonstrated with the utmost readiness by the ordinary methods. It is probable, indeed almost proved, that other disease germs, such as the bacillus anthracis, are carried from point to point by flies, and now this has been specifically proved in the case of the cholera vibrio. Dr. Simmonds placed a number of flies which had from time to time settled on the viscera, etc., of a cholera case on which he was performing a *post-mortem* examination in a flask large enough to allow of their free movement. As soon as they had been moving about long enough to ensure their having got rid of most extraneous particles (about three-quarters of an hour), they were placed in a tube containing a suitable nutrient gelatine, from which plate cultures were found. In a couple of days these plates were covered with colonies of the cholera bacillus, and the proof was complete. The inferences to be drawn are obvious. The humble fly-paper vendor is a far more useful and important personage than has yet been acknowledged.

FURTHER EXPERIMENTAL RESEARCHES ON IMMUNITY.—The experiments and results refer to tetanus only, *Lancet.* In testing the duration of the immunity afforded by serum from various sources, it was found that in rabbits treated with horse-serum the immunity was lost in sixteen days, and that there was rather strong local reaction. In rabbits treated with dog-serum the immunity vanished in fifteen days, and again there was considerable local reaction. In rabbits treated with rabbit-serum there was but slight local reaction, and the immunity was prolonged to twenty-one days. In the experiments, the various kinds of serum injected were of the same immunizing power, or were carefully made so by using proportional doses. From these results, the obvious conclusions have been drawn that the duration of the immunity which any serum will afford is

different in serums of different origin, and that in general an animal obtains the longest immunity if injected with serum from an animal of the same natural order. A further series of experiments went to show that the dose of serum necessary to save an animal which had been infected twenty-four hours previously with the minimum fatal dose is from 1,000 to 2,000 times greater than the dose of serum which will protect an animal when administered twenty-four hours before injection of the poison. It was also found that within definite limits an increase in the dose of the serum had the effect of shortening the duration of the treatment.

CALCIUM CHLORIDE AS A HEMOSTATIC—Saundby, *Birmingham Med. Rev.*, employed this remedy in several forms of hæmorrhages with distinct success. The first case was a middle-aged woman, with chronic jaundice of six months' duration, believed to be due to an impacted gall-stone. She suffered from free enterorrhagia, apparently the result of internal piles. After rectal injections of olive oil and the use of saline aperients had failed to check the bleeding, calcium chloride in small doses was administered every four hours with the satisfactory result that after five days the hæmorrhage ceased, and did not return.

The second case was an elderly woman, suffering from purpura hæmorrhagica, with free bleeding from the gums and slight hæmaturia. Ergot and gallic acid were of no use, and on the third day after admission, she was given small doses of calcium chloride every two hours. The bleeding ceased within five days, and the patient made a good recovery.

The third case was one of phthisical hæmoptysis in which calcium chloride was used with other measures, but in spite of all treatment a profuse hæmorrhage followed, which proved fatal. The autopsy revealed aneurism of the pulmonary artery, projecting into a cavity.

In these cases the dose of the drug never exceeded six grains, though in the case of purpura this quantity was given every two hours during the day for some days. Wright found that large doses—fifteen grains thrice daily for several days, caused a marked diminution in the coagulability of the blood.

ELECTRICITY IN UTERINE FIBROIDS.—Knowlsey Thornton says, *Br. Med. Jour.* : I have never yet been satisfied that any case of uterine fibroid has been cured by electricity. That it does in some cases check hæmorrhage by its local action on the diseased mucous membrane I fully believe, but so do many less troublesome applications, and so will one curetting, if more severe measures be necessary. That it does in some few cause the tumor to shrink for a time, I also admit, but unfortunately they very often only rest and then start off and grow again, and sometimes faster than before. It is within my personal knowledge that, in the hands of the most skilled operators, mischances do occur, and also that, instead of reducing the tumors, it does occasionally induce great rapidity of growth and pain and discomfort which were never there before. I have operated on several cases after it has failed to relieve them or made them distinctly worse, and this not precipitately, but after long and patient waiting for the benefits that were not apparent at first, but were to be so in three months, or in six months, or so on, after the actual treatment had ceased. I am ready to admit a little prejudice, but it is only the offspring of a conscientious endeavor by a study of the published cases to arrive at the truth. Show me the cures and I will believe. They ought by this time to be so many that the most skeptical could not fail to become a believer.

THE GOULD METHOD OF ABLATION OF PENIS.—The scrotum is split, and the incision continued down to the centre of the perineum, *Ill. Med. Age.* The penis is then seized and freed down to the attachments of the corpora cavernosa and to the rami of the pubes ; these are divided. The corpus spongiosum is next separated from the corpora cavernosa about an inch from the triangular ligament. The penis is removed, and the corpus spongiosum split and attached to the skin wound behind the scrotum. The long incision through the scrotum is sewn up. The groins are next attacked, and all enlarged glands thoroughly cleared out, the femoral vessels being exposed in the dissection.

Mr. Herbert Allingham is confident this is the best operation to perform, as it clears away all the dorsal lymphatics, and in cancerous affections it is most important to cut free and wide of the morbid growth.

Should there be any recurrence in the groin, Mr. Allingham would ligature the femoral artery and vein, and then thoroughly clear away the whole of Scarpa's triangle, and if necessary turn up the peritoneum and clear away the external iliac glands.

Relations between Chorea and Epilepsy.—Dr. Trowbridge, *Alienist and Neurologist; Med. Times*, says there is an intimate relation between epilepsy and chorea, both diseases being due to disturbances of the motor and intellectual centres of the brain, which differ only in the degree of intensity. Chorea predisposes towards epilepsy, and epilepsy toward chorea—the former being the most frequent condition. Chorea in one generation may be transmitted as epilepsy in the next or succeeding generations; or the epilepsy may appear first, and the chorea in the following generations. A neurotic taint in the parent or parents may make one child choreic and another epileptic. The diseases may exist simultaneously, but in these cases they are in inverse ratio, *i. e.*, the more violent the chorea, the less frequent and severe the epileptic convulsions, and *vice versa*, the more violent the epilepsy, the less marked are the choreic movements. In cases of chorea and epilepsy there is more or less mental impairment.

Reclus, *Gaz. de Hôpitaux; Am. Jour. Med. Science*, speaks of the use of hot water for the relief of painful hæmorrhoidal tumors. Tampons, wet with a 2 per cent. cocaine solution, should be kept in contact with the anus. In order to give a more certain relief, the anus should be dilated with a bivalve speculum, with or without anæsthesia. A tampon wet with a 2 per cent. cocaine solution is inserted in the ampulli recti for two or three minutes. An injection of a 1 per cent. solution of cocaine is made directly into the substance of the sphincter muscle. The speculum is then introduced and maximum dilatation made.

Reclus has treated sixty cases after this method, with only one failure. The relief was absolute, and the condition did not return. The author has never seen any disagreeable or dangerous symptoms result from this treatment. If it is thought likely that there will be a return of the trouble, the pile tumors should be cut off with cocaine anæsthesia.

Glycerine in Gravel.—Dr. Heymann, *Revista de Ciencias Medicus de Barcelona; Med. and Surg. Rep.*, has employed glycerine in renal lithiasis, on account of its property of dissolving uric acid and also passing unaltered through the kidneys. He records fourteen cases treated by this method. He summarizes his impressions as follows:

The first effect of its ingestion is to increase the thirst. In those suffering from stone in the kidneys, pains appeared in this region, it being limited to the one side affected. The quantity of urine was increased, and, after a varying time of nine to twenty-four hours, small calculi were expelled. In ten out of these fourteen cases he obtained favorable results. The pains were not as severe as those of renal colic while the urine, after its injection contained neither albumen, sugar nor hemoglobin. Even after three to four hours the presence of glycerine could be discovered in the urine, in appreciable quantities. A large quantity of mucus was also noticed. Based upon these results he regards glycerine as the most efficient means of treating renal lithiasis.

Chronic Glycosuria.—Sir Dyce Duckworth, *Br. Med. Jour.*, speaks of that class of cases which presents saccharine urine without any of the typical symptoms of diabetes. He believes in a modified diet, not a complete exclusion of starches and sugars. The moderate use of alcoholic drinks is permitted, Bordeaux and Moselle being preferable, though diluted whisky may be used. He does not consider it advisable to use opium in any form. He believes alkalies given in effervescence to be much preferable. Strychnine and arsenic he considers of the greatest value. While arsenic is not a curative agent, it is of inestimable value in all cases. The more regular and equable the life led the less are the inroads made by diabetes.

Relation of Aneurysm to Syphilis.—For many years, Dr. D. Drummond, *Br. Med. Jour.*, has been deeply interested in the connection between syphilis and aneurysm. Since commencing the investigation, no indisputable case has come under his notice in which specific disease was wanting, excepting two or three examples of acute softening of the arterial wall, with aneurys-

mal bulging, in malignant endocarditis. Arterial strain through hard work is, of course, a factor in the production of aneurysm, but it is one that in the vast majority of instances requires to be multiplied by specific arteritis, and then it is the lesser quantity of the two.

JAKOWSKI, *Zeitschr. f. Klin. Med.; Coll. and Clin. Rec.*, after bacteriological study of fifty-two cases of pleuritis, concludes that every pleuritis is of bacteriological origin, although the bacteria may not be found in the exudation. When repeated examination of a serous or purulent exudation shows no bacteria, the case may be considered as tubercular. The majority of primary, non-tubercular pleurisies are due to the diplococcus of Fränkel. The next most frequent cause is the streptococcus pyogenes. Serous effusions containing these latter are much more likely to become purulent than those which contain only the diplococcus. The most favorable prognosis is to be given in cases which contain only the Fränkel diplococcus.

CHAS. DAY, M.D., 70 St. Mark's Square, London, says: I have prescribed your preparation, Iodia, with very satisfactory results. Its power of arresting discharges was very manifest in a case of leucorrhœa, and another of otorrhœa. In the latter case, the result of scarlet fever in early life, the discharge had existed for many years. The patient could distinctly feel the action of the Iodia on the part, and the discharge gradually dried up.

DR. CHAS. NEDSKOV, Sorrento, Fla., says: Papine alone and in combination has been quite satisfactory. A case just dismissed may serve as illustration. The patient, a married lady, I found suffering severely from ovarian congestion and neuralgia. After preliminary treatment I ordered Papine, teaspoonful doses, half-hourly administered. Pain relieved after third dose, and next day she felt, to use her own words, "a thousand times better." Combined with Bromidia, a very noted improvement was effected in a case of "nervous prostration" and inveterate chronic insomnia. Papine's chief recommendation appears to be its uniform reliability, coupled with comparative freedom from deleterious after-effects.

Books and Pamphlets.

SURGERY. By Bern B. Gallaudet, M.D., Demonstrator of Anatomy and Clinical Lecturer on Surgery, College of Physicians and Surgeons, New York; Visiting Surgeon Bellevue Hospital, New York; and Charles N. Dixon-Jones, M.D., Assistant Surgeon Out-Patient Department Presbyterian Hospital, New York. Being the final volume of the Students' Quiz Series, edited by Bern B. Gallaudet, M.D. Duodecimo, 291 pages, 149 illustrations. Cloth, $1.75. Philadelphia: Lea Bros. & Co. 1893.

This little work of 301 pages, though coming as one of the Quiz Series, is really not a compend or summary, but an *explanation* of the principles and practice of surgery in a very concise form. It has 150 engravings.

SYLLABUS OF LECTURES ON THE PRACTICE OF SURGERY; arranged in conformity with the American Text Book of Surgery. By N. Senn, M.D., Ph.D., LL.D., Chicago. Philadelphia: W. B. Sanders. Toronto: Carveth & Co. 1894.

This little book should be invaluable to the student, giving him a more complete classification of surgical points than he can hope to make for himself, or to obtain from any course of lectures at any college. It will give him the essential points, something upon which he can rely at examination time, either in the hall or at the bedside. To the practitioner it will supply a ready grasp of a whole subject, when he is two pressed for time to read in the ordinary text book.

OUTLINES OF OBSTETRICS; a syllabus of lectures delivered at the Long Island College Hospital. By Charles Jewett, A.M., M.D., Professor of Obstetrics and Pediatrics in the College, and Obstetrician to the Hospital. Philadelphia: W. B. Saunders. Toronto: Carveth & Co. Pp. 264; $2. 1894.

The object of this little work "to help the student in securing a classified knowledge of the outlines of his subject," is well carried out. It will be found useful as a handy book of reference for facts, anatomical and otherwise.

HISTOLOGY, PATHOLOGY AND BACTERIOLOGY; a Manual for Students and Practitioners. By Bennett S. Beach, M.D., Lecturer on Histology Pathology and Bacteriology, New York Polyclinic. Series edited by Bern B. Gallaudet, M.D. Philadelphia: Lea Brothers & Co., Toronto: Carveth & Co.

A useful compendium, on the works of Delafield, Prudden, Schafer, Klein, Zeigler and Frankel. Handy for reference.