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## THE CAUSES OF MENTAL IMPAIRMENT IN CHILDREN.

BY DR. J. MADISON TAYLOR, A.M., M.D., OF PHILADELPHIA.

Probably no one factor so largely contributes to the increase of the dependent classes as abnormalities of mind or morals begun in children. The causes conditioning these states are the fundamental ones which underlie all insanity and crime, and have been discussed in the earlier essays of this series. It is my privilege to call attention with some particularity to those phases of the matter which are less conspicuous, but yet from the nature of the subjects, young persons, rich in possibilities of remedy.

It is entirely impossible to do justice to the subject in so brief a paper, but this will serve as an introduction to the subject on some future occasion. It is enough if I can here suggest avenues of research, and may myself learn something of the subject by pursuing it further. Above all I could wish the general practitioner might become interested in searching into causes and making and recording observations in these lines. Successful treatment of insanities depends upon the prompt recognition and judgment of the family physician. He may thus avert unspeakable evil from those in his keeping, and he must aid the specialist to the uttermost, both by keen observation and by promptly bringing suspicious tendencies to the notice of alienists. He it is who has the opportunity to note the potentialities of families—their trophic energies, their resisting powers, susceptibility to toxic influences, the stability of their nerve cells. His is the privilege of setting aright, when possible, evil traits, and remedying faulty educational plans, and detecting those sensorial defects on which depend abundant developmental possibilities.

The causes of mental impairment are twofold—remote and immediate, or essential and accidental. My friend, Dr. Pearce, in a paper attached to this has gone into statistical detail, presenting with much clearness well-accepted views and a large amount of entirely new data. He sheds some light on the subject of etiology. Our sources include reports from Elwyn and Vineland School for Feeble Minded Children, where I am on the consulting staff, data and opinions from my friend, Dr. Tomlinson of St. Peter, Minn., the California Home for Feeble Minded Children, the private school of the Misses Cox and Bancroft, and that of Mrs. Seguin, and researches among the dispensary records of the orthopedic hospital, where we are on duty.

The real fundamental essential causes of mind impairment are those degenerative influences which have to do with producing instability of the nervous centres and cells, *unavoidable because finished*. The determining or exciting causes are of great variety, *avoidable possibly* and rarely, almost never such as are capable alone of producing mental degeneration. While of vast importance to study the real causes, little can be done to influence them except by movements of widest co-operative scope. Nature sets bounds to many of these damaged families by limiting their reproductive powers (it would seem at times insufficiently). But we may have great confidence in nature's methods, especially if we can divine her ultimate intentions. Among those may be the fact that under suitable environment and opportunities a *regeneration* is possible.

During the period of brain growth in bulk up to the seventh year, when the full size and weight is almost attained, nutritive influences are of the largest value. How far this can reach positively needs future demonstration, but is rich in promise; how far negatively is well understood, but receives as yet insufficient support. There is during these early years more formative power and less out-put of energy exhibited. The brain of a babe or infant consumes more oxygen and produces more carbonic acid and urea. The chemic constitution of the muscles is different, and, no doubt, of the nature of the nervous centres. They are more subject to proliferative diseases, and less to those of disordered function and degeneration.

One, if not the most, important quality of the brain during this formative epoch is deficiency in its resisting power. In this respect it shares with many other organs, but none of them are comparable in importance to the brain. This power to resist hurtful influences from without, or from within, is the very key-note of childish physiology, the index of vital force. The wide variations between functioning power in structures which are (to all our present means of investigation) of practically similar structure are the special realms for promising investigation in the future. Whatever interferes with these delicate buddings of energizing and gatherings of potentiality there leaves its blighting mark for all time.

"The most serious of pathologic fact of brain development is certain mental disturbances in the functions of the brain, and these are intimately associated, hereditarily and functionally, with certain motor, sensory and trophic neuroses incidental to the period of development." (Clouston.) The brain has recently been shown to be the stimulator and inhibitor of all nutrition, the key to all the functions of all the organs and tissues.

The unique fact about the nerve cell is the extreme slowness with which it develops function after its full bulk has been attained. Small differences in amount of blood, in the condition of that tissue, its acidity or alkalinity, its cleanliness or toxicity—the pressure maintained in the cerebral vessels from whatever cause—especially if continued just a little too long and irreparably hurt, may come, or such damage as require much time and perfect condition for repair.

A careful review of our evidence reveals one uniform and all-prevailing error, requiring to be perpetually discounted in these and all other

similar histories, *viz.*, the exact truth about the children is rarely or never told. Sometimes this is due to incompetent willingness, but more often to systematic endeavor to mislead. Very frequently it is impossible to be exact, those testifying being not in possession of the essential facts, or retailing them at second or third hand. Again, in a large proportion of the cases, the parents testifying are themselves mentally incompetent. They are certainly rarely fit to rightly grasp the spirit of the inquiries. Most often the inaccuracies come from deliberate intention (sometimes innocent vanity, oftener *malice prepense*) to make the very best of the family and personal histories. These views are had (spoken privately of course, and with bated breath) from the excellent gentlemen who preside at these institutions and do their utmost to arrive at strict truths. It is also obvious to us when trying to collect testimony, as we have repeatedly found in clinical work in dispensary and private cases.

The one factor common to almost half the cases is alcoholism, forty per cent. conceded by many observers; and how much more can only be conjectured. Next comes other mental defects, many of these again might be referable to alcoholism as a not directly traceable but essential factor.

Krafft Ebbing shows the close relationship of alcoholism and mental disease by the exact analogy in acute alcoholism to the insane states from melancholia to imbecility. It begins with slight maniacal excitation, thoughts flow lucidly, the quiet become loquacious, the modest bold. Muscular action becomes imperative, the emotions become exalted, as shown by laughing, singing and dancing; then follows loss of control over esthetic ideas and moral impulses; the victim becomes cruel, cynical, dangerous; the mind weakens, consciousness grows dim, illusions arise; he stammers, staggers, and becomes a temporary paralytic and afterward a melancholic.

Alcohol, moreover, when misused, habitually injures all organs and tissues, notably the blood, resulting in pathologic states or increased susceptibility to disease; or intensifies any latent feebleness. In short, it breaks down the barriers which a vigorous vitality sets against the unceasing onslaughts of death. It incidently perverts the more delicate aggregations of cells, as in the brain and central nervous system, not only imperilling their integrity, but reducing to a lower level the vital force needed to reproduce offspring of full powers and resistances.

Dr. Hughlings Jackson says that those powers of mind developed last are least stable, and the first to be paralyzed by alcohol. Dr. Kraepelin shows that alcohol prolongs the reaction time needed for discrimination and decision. If such effects as these are recognized to fall upon normal organizations, how much more potent and serious upon those whose stability is already lessened from various causes natural or acquired.

As Darwin points out, all the evils from alcoholism can pass from father to son, becoming worse if the use of this poison is continued, until the result is self-limited in many happy instances by sterility.

The more pronounced effects of heredity are not to be remedied. The morbid effects of parents is maximum when conception takes place during drunkenness of one or both. (Dr. L. Grenier.)

The children of hereditary alcoholics show a tendency to excess in the

same way, and this may be an index of impaired physical resistance in the whole family. Grenier also asserts that delirium is more frequent in the descendents of alcoholics.

Dr. Legrain shows that a slowness of evolution, frequency of relapse, feebleness of mental faculties, and poly-morphism of delirium characterize the effects of alcohol on the degenerate offspring.

Krafft Ebbing (*Psychiatrie*, 1890) defines insanity from the anatomic point of view as "a diffuse disease of the brain accompanied by nutritive, inflammatory, and degenerative changes." The division between mental and brain disease is one for convenience and much wordy debate, lacking in scientific *raison d'être* and yet well worthy of comparison and attention. Psychologic classifications are eminently unsatisfactory, at least when striving to search out causes for pathological changes.\* J. Batty Tuke (*British Med. Jour.*, May 30, 1891) remarks (and what he says is nearer right than most), "Insanity is not a disease, but a symptom produced by morbid conditions which may arise primarily in the brain, or secondarily from depraved conditions of the general system." Certain causes produce demonstrable (not always demonstrated) changes of tissue, as inflammation, hyperemias of excitation, traumatism and adventitious products, toxic agents, senile degenerations, epilepsy, and syphilis. Over excitation of the brain is acknowledged as an inducer of insanity independent of other morbid factors. If the nutrition of the cells is unduly interfered with for a long continued period of time, a series of changes ensues not only in the cells themselves, but also in the vaso-motor and vaso-dilator control systems, which may be temporary or permanent.

The circulatory apparatus is overtaxed to meet the increased demand; but the cells being stimulated beyond the health limit a condition of unstable equilibrium between nutrition and function is reached, and consequently, instead of normal discharge of energy, irregularity of discharge is produced by the prolonged maintenance of over vascularity.

Malnutrition is both a powerful exciting cause and itself competent to irretrievably damage the brain. In this country we are less influenced by the deprivation of food, being better provided in this particular than any other large nation, but the people are more subject to disorders of over-tension from protracted strains on the nerve resistance. We are less given to alcoholism because our food supply is ample and the craving for stimulants by underfed stomachs less general; but owing to the intensity of effort, our habits of fierce competition, there is induced a feverish restlessness and higher cell activities. The brain being the stimulator and inhibitor of all nutrition, as Clouston points out, hence becomes responsible for the functions of all the organs, and as they fail it suffers harm.

Melancholia often occurs in certain anemias and is a transient state in many toxemias, notably the uneliminated by products of katabolism. The action and reaction of the peripheral organs upon the brain is shown in numberless ways, in the therapeutic value of careful nutritive regulation in the insane, which is often alone curative. It is again shown in

\*Always excepting those exact studies made by such men as Prof. G. Stanley Hall and the physiologic students of psychology.

the extreme susceptibility of the insane to phthisis, greatly lessened by judicious feeding and attention to digestive and other organs. The asylums now afford far better comforts than are enjoyed by the average person, and this tendency to the tubercle is kept down, but even then is often seen. Moreover, even in these comfortable homes, where food, leisure, wholesome occupation, air, and sunshine is lavishly provided, tubercle shows itself readily and is hard to check. Great improvement is frequently made by the systematic measures known as the rest treatment, in asylums, as well as in private practice, influencing powerfully for good those who with many opportunities yet have failed to secure the forcing of their nutritive processes which is known to be essential and which wise measures sometimes accomplish.

Heredity must be clearly distinguished from inheritance, and should be considered in the light, certainly, of several ages and many years, probably a century or more. It has to do with the transmission of certain tendencies and peculiarities, which are not only the "hall marks" and special complexion of families, localities, communities, but of *racés and nations*.

We can at once recognize the potentialities, the result of inbreedings of people of like kind or analogous traits; but to estimate those fairly it is imperative to consider the environment, the religious, national and political lights or influences under which these matured. More than these even (which have largely to do with intellectual processes and the formation of character and characteristics) is the question of physical habits and customs, opportunities, and tastes which very much more influence the physique, and through this the brain structure, where are the more impressionable cells in the body. The quality and condition of the mind is profoundly dependent upon the integrity of the material of which the brain and nerve centres are made and maintained, more so than upon any of the modifying influences of a psychical, moral or transcendental nature. Whatever else may be the distinguishing feature of the mind *nothing can be predicted for good of a faulty structure of the organ of the mind*. Moreover, admitting the possibility of a competent brain in a body equipped with an unstable or defective nervous organization, at least, this condition cannot be maintained and must react disastrously upon the mind organ soon or late. Inheritance may then represent the conditions which directly or recognizably influence the child in its mental or physical features. It may include certain tendencies, too, which are possibly independent of heredity, as for instance, tastes, tricks of speech, and manner or appearance, feature and size. These inherited qualities may be few or many in one or another of the same family, as several tall, fair, cheery ones evidencing the normal trend, and also one or two short, dark, gloomy children showing the magnificent uncertainties of prophesy.

Then again, there are the families of robust procreative powers, powerful to reproduce peculiarities in one or another direction, (as in a few Royal families where their accidental conspicuousness enables them to be studied) in whom qualities of mind are recognizably preserved, but much less frequently than qualities of bodily conformation, in shape, size, tastes, and susceptibility to disease.

The secondary results of these latter are most pronounced and run into formulations, if not laws. Alcohol, when enjoyed more freely, produces recognizable results rather more obviously upon the nervous organization of offspring than upon shape or build. From its use come various degenerations, notably upon unstable nerve cells, which again are exhibited in perversion of mental, but even more upon moral tone, until at times pronounced criminality alternates with insanity or fateity, and these with motor instabilities, as in epilepsy, etc.

Consanguinity of parents does certainly seem to influence offspring disastrously. I have seen this several times where a careful search failed to reveal any other factor capable of large influence. One, a couple, second cousins, of fine physique and ancestry, and of the best habits, bred two geretous idiots, who early died.

Dr. Ratchford has recently considered the causes of neuroses in children, and Dr. W. S. Christopher (*Archives Pediatrics*, 1894,) elaborates these views more fully and his summary—too long to quote—seems to me most rational and complete.

B. W. Richardson says: "If the inter-marriage of diseases were considered in the same light as the inter-marriage of poverty, hereditary transmission of disease would be at an end in three or four generations."

The truth, to my thinking, about heredity is something like this: whereas in a careful study of remote influences bearing upon the characteristics of an individual we may grant that some allowance must be made for ancestral traits of body and mind, but only so if within three or four generations. Beyond this it is rarely possible to determine. Much more significance may be given to bodily peculiarities, and especially tastes, more particularly evil tastes, which far outweigh in influence wholesome ones. Nothing certain can be made of psychical peculiarities, for in one of the most conspicuous means of demonstrating this, as in matter of religious convictions, these are not reproduced and only feebly impressed when under constant, direct influence and training. The taste for music, art, and literature is rarely more than individual, and almost never transmitted except to the second or third generation, and most of this is through example and opportunity.

On the transmission of physical peculiarities much more may be said. Size, shape, coloring, conformation of feature, hair, are frequently seen to prevail, generally under favorable conditions, for several generations; also tastes for certain forms of life, occupation, and amusement, and above all for narcotics, are liable to continue.

*(To be Continued.)*

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JOHN HOPKINS UNIVERSITY.—We regret to learn that the John Hopkins University is sorely embarrassed financially by failure of the Baltimore & Ohio Railroad to pay dividends. Friends of the institution are making efforts to raise a subscription of \$50,000 annually for five years, in order to tide over the affairs of the university.

## OBSERVATIONS ON ANTISEPTIC THERAPY.

BY O. McCULLOUGH, B.A., M.D., ERIN, ONT.

In the June number of THE CANADA LANCET, there appeared an excellent editorial on the "*Nature of Puerperal Fever.*"

Now, I think the word *nature* is a most apt and well-chosen word, and the best in its list of synonyms, as every one understands its primary meaning, and I infer that it has this signification in the article to which I allude. The expression *puerperal fever* is not so suggestive or definite as we would like, but it is the old familiar term which our conservatism delights to retain. It is the name of an associated symptom or condition in the same sense that *glycosuria* is—a sort of metonymy, by which a certain effect is put for the cause which lies deeper. The uric acid diathesis comprehending apparently a wide class, is attracting much attention now, and the aim of medical science is to proceed by induction, as the logicians would say. General principles and causes are aimed at, while symptoms are only the data or evidence for the investigation of cause. We have passed the Augustan age of etiology, and are now in its Victorian epoch—a brilliant period, and already we hear of twentieth century practice.

Chemistry and the microscope promise much in medicine. Listerism, by which I mean the whole field of antiseptic application, with its consequent approach to aseptic conditions, has made operative surgery a greater success than ever, and if it is not all that its advocates claim, it is cleanliness anyway, and any attempt to displace it would be a step toward the "dark ages" of practice. Let us approach the sanctuary of antiseptics with all reverence.

Whether its concomitant outgrowth, the destruction of one poison by the antagonism of another, will become a part of the medical creed remains to be seen, but it is just possible that the chemistry of nature works in this way. Non-pathogenic organisms may accomplish the destruction of the pathogenic in order that the vital functions may be preserved intact. Physiology is the antagonist of pathology, for nature always resists the invasion of its functions. Both acid and alkaline secretions are essential for the vital processes, and we know clinically the effect on nutrition when there is any substitution or exchange of reaction. Litmus paper has its place in therapy, and the microscopic side is a supplement to the macroscopic. Qualitative analysis is only a part, quantitative completes the whole. Esbachs' method of estimating albumin is a step further than the nitric acid test for its presence. Diagnosis does not stop at symptoms, nor does it reason by analogy, but it recommends that every case be studied on its own merits after those symptoms have been noted. This is the index to successful treatment. It is doubtful whether there is any such thing as a functional disease. Either qualitative or quantitative changes may effect the secretions, and so cause disease. We must have more chemistry in clinics, and all our investigations must be as exact as possible, for the exact sciences demand exact methods. The



blood and urinary secretion must be carefully tested in those obscure cases of cachexia often dependent on imperfect oxidation. The use of the microscope is becoming more general. And over and above all, we must be shrewd observers. The eye, the ear, the sense of touch, and the muscular sense carefully trained, furnish us with a knowledge of the objective in disease, as the subjective part belongs to the patient, and is not the physician's work. Every doctor must endeavor to be as far as possible a physician, surgeon, and accoucheur, full of general knowledge, for a specialist without this general knowledge is in no sense an educated man. In the science and practice of obstetrics as well, this general knowledge must be acquired for success. I have made this apparent digression to impress the fact that we must be students always in order to be doctors. Leaving the last paragraph, and resuming a former one, I would say that the antiseptic system has been carried to excess, not in surgery, but in midwifery. The accoucheurs of the past delivered large families into the world from their uterine incarceration at term, and how many mothers of these large families are still comparatively well, as old age approaches, and all without any antiseptics at childbirth. It is not fashionable to have large families now, and yet we have seen an increase of septicaemia with the decrease of the birth-rate. Is it meddling midwifery that introduces a poison from without, or is there some peculiar activity in our modern infective diseases that encourages the existence of blood-poison, even though these diseases are far removed from the streptococcus of septicaemia. Professor Lyman, of Chicago, in declaring that epidemics cannot be controlled by "mere sanitary rules" apart from home sanitation, says that the "suppression of small pox has been followed by increased mortality in scarlatina," and that "the suppression of scarlatina and measles has been followed by increased mortality in typhoid, diphtheria and diarrhoea." If this be true, diseases must change in character and intensity with social condition. Cleanliness is the *sine qua non* of health, and antiseptics is its modern form. In the article alluded to at the outset the learned editor of THE LANCET commends Professor Lusk, that eminent contributor to American obstetrical literature, for his crusade against modern midwifery. Dr. Lusk has made this noble statement worthy of a progressive teacher.

"I reserve to myself the privilege of changing my views to-morrow if it seems to me new observations should make a change necessary." A man cannot remain a conservative in medicine as he can in politics, but he must be of a deliberate turn of mind to preserve himself from continual experiment. Dr. Lusk, in accordance with modern authority, says that the acidity of the vaginal secretion is increased by natural micro-organisms, which antagonize the streptococcus of septicaemia. (I would just add here that the older writers taught that the streptococcus of erysipelas caused septicaemia in the puerperal woman.) This is a part of the protective wall that nature has erected, and is essentially a chemical defence. The other part is a mechanical barrier found in the accumulated mucus of the cervical canal, which is virtually an antiseptic pad. There is no doubt about the truth of this, for even in menstruation the glands of the cervical canal are very active in the secretion of

mucus stimulated by the hyperaemia of the neighboring parts. But mucus is not necessarily anti-toxic, for its excessive presence in chronic cystitis may encourage offensive decomposition. In calculous pyelitis Dr. Moullin, of London, recommends the internal administration of turpentine to dispel the mucus in which the calculi flourish. Mucus can readily accumulate in both acid and alkaline surroundings, and when present in the stomach it interferes with the normal acid secretion of that viscus, but the accidental acids may be present in great excess. So mucus cannot give chemical protection to its immediate surroundings, but is possibly more than a lubricant at any rate. Dr. Lusk goes on to say in a graphic manner that the amniotic fluid, child and placenta, all going in the direction of gravity, complete the toilet of the passages. He therefore makes war on the douche, which he claims dissolves the mucus, and weakens the resisting power of the tissues. He regards parturition as a normal act, a physiological expulsion, and therefore self-sufficient.

All this is excellent doctrine *pro tanto*. But there are cases in our modern society where nature is not adequate to the task imposed upon it. There are in the obstetric domain accidents which the most careful patient and physician cannot avoid. There are mal-positions and post-partum hemorrhages, not the rule it is true, but the exception in the practice of every lifetime. There are mal-formations of the hard and soft parts—the misfortunes of women whose nutrition has suffered, not only in development, but in growth. There are those predispositions in the mother or child to cause abortion—a perversion of the natural processes. There are certain tendencies and accidents which beset the female from her advent into this world to her exit from it. In fact we might enumerate a long list where unaided nature would fail in expulsive power at the time of child-birth. All these cases need assistance, and the most careful antisepsis, if not on the patient's side, at least on the accoucheur's, and possibly both.

Dr. Lusk says, the physician very frequently carries the infection to the lying-in woman, and probably this is true. It therefore shows the necessity of a previous baptismal antisepsis on his part. He justly censures the curette responsible, as it is, for many a lesion and many a graver accident, and if these are escaped, indeed, it prepares a field for emigrant germs.

(To be continued.)

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ALCOHOL HABIT.—Dr. Machette, in the *Med. World*, claims to have but two per cent. of failures in his treatment of the alcohol habit. He gives his patients a hot bath and a cathartic, then a hypodermic injection of hydrastine, beginning with one-fiftieth of a grain and gradually increasing until one twentieth of a grain is given four times a day. Valerian and bromide are given for nervousness.

## SURGERY.

IN CHARGE OF

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### SURGICAL TREATMENT OF INTRACRANIAL TUMORS.

Prof. W. W. Keen contributes a paper with this title to the *International Medical Magazine*, of March, which is replete with valuable suggestions. With reference to method of opening the skull proposed by Doyen—to make an osteoplastic flap of the entire side of the skull—he states that while it will greatly simplify the treatment of tumors, it is doubtful whether so extensive a temporary resection will stand the test of time. The mode of access to the tumor, if Doyen's method is not followed, is either by the ordinary method of trephining, using not less than an inch and a half trephine, and making either a single or multiple trephine openings, which may be later connected by sawing or gnawing away the intervening bridges of bone, or by various methods for making the usual temporary osteoplastic resection.

The skull being opened, we may follow one of two courses. First, especially if the tumor is small, we may proceed with its extirpation and the closure of the wound, or secondly (and this is especially applicable to tumors of large size), the first part of the operation may be terminated so soon as the brain is exposed and the hemorrhage checked. The wound is then temporarily closed, and the remainder of the operation is completed after the lapse of from three to six days. In large tumors, the author advises that the operation should be divided into two stages. Hemorrhage and shock, the two principal dangers in connection with the removal of cerebral tumors, are thus minimized. It has, however, the disadvantage of a possible infection.

The control of hemorrhage is one of the most difficult problems in connection with the removal of cerebral tumors. Hemorrhage from the diploë is easily controlled by Horsley's antiseptic wax. For hemorrhage from the vessels of the meninges the ligature is an efficient means of control. If the dura be cut and an artery bleeds, the cut end can be tied just as any other vessel. If it be necessary to ligate the vessel in its continuity in a dura unopened, though with torn vessels, it can be secured by passing a fine silk thread by means of the finest semicircular Hagedorn needle under the dura and around the vessel, care being taken not to wound the underlying cerebral veins themselves. For venous hemorrhage, the best method, also, is the ligature. Rarely can the vessel be seized by the forceps and a ligature applied. The best method again is by the semicircular needle of suitable size, to pass a silk or catgut liga-

ture through the cerebral tissue immediately below and around the vein, and then to tie the vessel by drawing with equal force on the two ends, not constricting the vessel with so much force in tying the knot as to tear through its weak walls.

Sometimes packing and hot water (not over 110° F.) will aid greatly in arresting any copious oozing. If the sinuses are torn or opened, the hemostatic forceps may be used to grasp the opening, if it is small, or, as done by Dr. Keen in one case, by three pairs of hemostatic forceps placed alongside of each other, the opening can be closed. The forceps may then be allowed to remain *in situ*, and may be safely removed in three days. Should this method not be available, then the sinus should be plugged with iodoform gauze, the end of which protrudes through the scalp wound, and can be safely removed again after three days.

Any of the superficial sinuses of the brain can be exposed with almost perfect safety by gnawing away the bone over them after having separated the sinus gently from the skull by Horsley's dural separator or a probe. The point where the parietal veins enter the superior longitudinal sinus should be avoided, if possible, as these are large vessels, and a great amount of blood may be quickly lost. Hemorrhage from the sinuses, however, can be controlled again by packing, if not by the hemostatic forceps, or possibly by fine suture.

In separating the dura from the brain, great care must be taken as we approach the superior longitudinal sinus. The veins of the brain widen into venous bays (the parasinoidal spaces), from which the hemorrhage will be often more profuse and alarming than from the sinus itself. The loss of blood from the cerebral veins is certainly more dangerous than the loss of an identical amount from other veins of the general system. Hence, when the finger gently introduced under the dura in the neighborhood of the superior longitudinal sinus perceives any attachment of the dura to the brain, we should be most careful to desist from any further separation of the parts, lest by doing so these large veins be torn and a parasinoidal space opened. On no consideration should this be done until the bone has been first widely gnawed away over the point of the adhesion to give ample room instantly to deal with possible hemorrhage.

Not uncommonly we can avoid a great deal of hemorrhage from the cerebral tissue by lifting the pia from the underlying convolutions so as to avoid the veins by working under them. The pia can be drawn out of the deep sulci in this manner with relative ease. Great care must, of course, be used in manipulations under such a displaced pia.

The tumor, when discovered, may be removed either by the finger if it be well encapsulated, or, if not, then by the knife, which should be held vertical to the surface, so as to injure the adjacent cortex as little as possible. At the same time, we must remember, especially in cases of sarcoma or its allies, that the infiltration of the cerebral tissue extends some distance beyond the tumor proper. Therefore, some of the apparently healthy brain tissue must be sacrificed for the purpose of safety. This may induce paralysis of important centres, but no such calamity can compare with the certainty of a return, and, therefore, of a future fatal

issue by a less thorough removal. Not uncommonly the scoop or curette may answer for the purpose of removing any remaining portions of the tumor after the main part has been removed.

Even in cases in which the tumor is too large to be removed with safety, a partial removal often gives very great relief, especially to the intolerable headache and other similar distressing symptoms, and this partial removal may be attempted not only once, but, as the author has done it in one case, three times, and each time with great relief.

Should it be impossible to remove any of the tumor, the mere removal of the bone over the tumor will often give very great relief.

Sometimes the dura is involved in the tumor, and must therefore be sacrificed. The danger of fungus cerebri is relatively small when the dura is closed after being opened, and especially if the brain substance itself has not been interfered with. In such cases, as Dr. Keen suggested a few years ago, the dura may be replaced by a bit of the pericranium. A piece of this, a little larger than is sufficient to make good the lost piece of dura, is cut entirely loose from the under surface of the flap of scalp, and is sewed in place by a few interrupted sutures. In doing so, while not sure that it is needful, he has always, on theoretical grounds, however, turned the pericranium upside down, so that the osteogenetic surface should be external. If, then, any bone is developed from this osteogenetic surface, it grows away from the brain instead of into it.

Excepting cases of abscess, gunshot wounds, intracranial hemorrhage, and cysts, it is the author's rule at present not to drain. Occasionally, on account of hemorrhage, it will be necessary to leave some iodoform gauze protruding from the wound, and this acts as a drain. In such cases, however, he always inserts a stitch in the scalp at the time of operation, so that as soon as the gauze is removed, the wound may be entirely closed, or, should there be any need for drainage for twenty-four or forty-eight hours after removal of the gauze, he inserts a small bit of gauze to keep open only the skin wound, and the stitch is tied as soon as the need has passed. If no drain be employed, very frequently by the second or third day the flap will bulge considerably by reason of the accumulation of wound fluids under the scalp. If this is the case, and all the more if it is attended with headache or other pressure symptoms, he either inserts a pair of forceps between two of the sutures, and thus give exit to the wound fluids, or sometimes cut a stitch for the purpose of gaining sufficient room for the evacuation of the fluid.

A month or more after the patient has entirely recovered from the operation, the question of closing the opening in the skull will naturally arise. Until this closure is effected (and sometimes it is best never to close it) he always directs the patient to wear a skull-cap, on the inside of which is sewn a bit of tin a little larger than the opening, the sewing being made possible by first covering the tin with some silk.

Sometimes the opening in the skull can be closed immediately, and this is best done by replacing the bone in bulk. In about fifteen cases, Dr. Keen replaced a button of bone an inch and a half in diameter and the entire thickness of the skull, and in not a single case has the button lost its vitality. If this is to be done, however, the button of bone must

be very carefully kept warm and moist, by placing it in a cup in a 1:2000 bichloride or some similar solution, and placing this cup in a basin of water with a thermometer, so that the water shall be kept from 105° to 100° F.

For this König has adopted a very ingenious method. At any late time after the opening has been made, by accident or by a surgical operation, he has dissected away the scar over the opening, and has then outlined an adjacent flap of the shape and somewhat larger in size than the original opening to permit of shrinkage. The flap is not separated from the skull, but under it he chiselled away the outer table in fragments, these fragments being left adherent to the under surface of the flap. By sliding the flap into place so as to cover the opening, he has in that manner closed some very large gaps. The place left bare by the transplanted flap is then covered in by skin-grafting by Thiersch's method.

Dr. Keen has modified this method in the case of a young man suffering from severe epileptic attacks in consequence of a compound fracture of the skull. In November, 1890, he exposed the opening in the skull, removed a considerable amount of cystic connective tissue lying over the brain, and endeavored to close the opening by transplanting a bit of bone from the skull of a lamb. The operation failed, however, since the lamb's bone underwent partial absorption, and finally the necrosed fragment had to be removed. Great improvement followed in the epilepsy, but lately the attacks became more frequent, and in January, 1896, the author reopened the wound and removed a considerable amount of loose spongy scar tissue. To close the opening in the skull he chiselled away the adjacent outer table of the skull by means of a gouge and hammer. These fragments were then scattered over the surface of the brain (or rather upon the spongy scar tissue which filled up the entire opening), so thickly as to leave no space between any two. Three weeks later these fragments had become quite solidified, and there is every reason to believe that they will fill the opening in the skull by fusing into a true bony tissue.

One advantage of this method over König's, of an osteoplastic flap, is that one can obtain as much bone as is needed from the adjacent portions of the skull, and at the same time not produce puckering of the scalp from displacing the flap on its pedicle. Another is that it does away with the necessity of skin-grafting. Dr. Keen regards either of these methods as superior to Senn's decalcified ox-bone, or the use of celluloid plates or other foreign bodies.

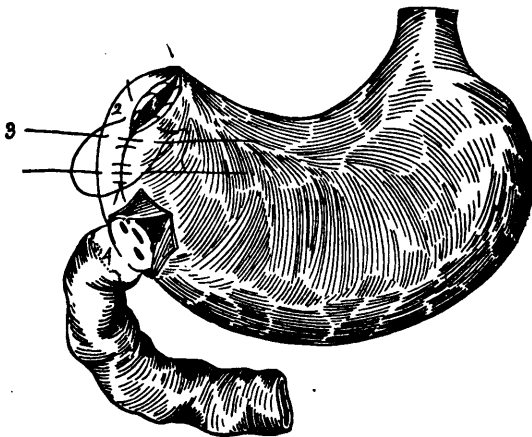
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#### PYLORECTOMY IN AMERICA.

Dr. Alex. Hugh Ferguson, of Chicago, reported a case of carcinoma of the pylorus upon which he had successfully operated. He recommended pylorotomy for carcinoma of the pylorus for the following reasons: (1) Medical treatment offers a mortality of one hundred per cent. within twelve or eighteen months. (2) Pylorotomy promises a possible

cure. In nineteen per cent. of over nine hundred cases dying with cancer of the pylorus no adhesions whatever were found after death; starvation took place before the carcinoma had reached the peritoneum. There would be good prospects of curing most of these. Recovery follows the operation in about fifty per cent. of the cases. By timely interference many cases can be saved that now go on to secondary infection and are doomed.

After opening the abdomen, Dr. Ferguson recommends the performance of pylorotomy thus:



(FIG. 1).

1. Continuous Suture in proximal cut end of stomach.
2. Coating Continuous Suture inverting mucous membrane.
3. Interrupted Suture of Silk.
4. The Anastomosis Button.

1. Liberate the duodenum from the pylorus, unite its distal cut end to the posterior surface of the stomach with Murphy's button, invert the proximal cut end toward the pylorus, and close with sutures. The great advantage of completing the gastro-duodenostomy first is that the operation can be safely stopped at this stage should the patient show signs of weakening, the abdomen be at once closed, and the removal of the pylorus be left for a second operation.

2. Separate the stomach from the pylorus and close it rapidly with sutures. Should the patient now

present alarming symptoms, the surgeon should again cease operating and leave the pylorus *in situ* in the mean time. It would, of course, be necessary to fasten it in the abdominal wound and drain it externally, which would only facilitate its extirpation at another time.

3. Remove the cancerous pylorus. Spend no time in trying to use interlocking ligatures, but apply forceps after forceps and cut the mass away. This done, the application of ligatures can be effected more expeditiously.

### TUBERCULAR PERITONITIS.

Dr. Robert Abbe, New York, thought it gave a fairer understanding of the multiform appearances of the disease if viewed from the standpoint of the bacillus, rather than from the gross appearance, which has led to the division into the ascitic, the dry and the caseating forms. A sudden tubercular irruption into the peritoneal cavity may be as acute in symptoms and durations as acute peritonitis from other causes. A

slower outbreak may result in ascitic distension in three or four weeks, and a less virulent bacillus action may occupy months in inducing ascites and wasting. In other cases, possibly due to the route of invasion (penetration through lymphatics, communicating mucous and peritoneal serous coats, or by follicular ulcers, allowing tuberculous milk to be the medium of infection), a dry or adhesive form follows, in which hectic and rapid wasting result. Again, the bacillus produces an outpouring of thick lymph and flocculent serum, which rapidly becomes purulent, producing unsymmetrical cakes of thickened omentum, matted coils of intestine and encapsulated purulent collections. The bacillus produces rapidly caseate and ulcerating fistulæ may result. All phases of the disease may be regarded as representing the life history of the bacillus and its products.

Tubercular peritonitis may be, and in the early stages often is, the only site of tubercle deposit in the patient. Hence, if overcome here, a practical cure often follows. Even when other phases of infection (pleural, intestinal, bronchial) are seen, an operative cure of the peritonitis has often been followed by general recovery. The mode of entrance of the bacillus is directly through the intestinal wall, or through ulcerating appendicitic, or tubal or ovarian tuberculosis, or through the blood. The claims of a few recent authors to have cured tubercular peritonitis by medical treatment were reviewed and credited.

The unquestioned cure of true tuberculosis peritonitis by laparotomy was proved by two classes of cases: those who have long survived operation, and those who, having come to autopsy long afterwards, have been found free from tubercles that studded the peritoneum at the time of operation. Experimental proof in animals corroborates also. Simple laparotomy and evacuation of the ascites, closing the abdomen dry, is credited with a large number of cures. Irrigation with warm salt solution is to be preferred. Camphor-naphthol application, as used by Rendu, is advised for bad cases.

In speaking of direct medication, the theories advanced to account for the surprising cures were carefully considered, and, in conclusion, it was said that, "the theory that is sustained by most facts is that based on the life history of the bacillus and the capacity of the animal economy, not only to suppress the activity of the organism by encapsulating it, but to remove it by absorption. The proper opportunity for conquests is not afforded in the presence of ascitic fluid, which acts as a veritable culture bouillon, and by its fluidity aids dissemination. When, however, the peritoneum has been aroused by congestion, which follows evacuation, and a reactionary inflammation is set up, engendering cell hyperplasia, the intruder is walled in, and retrograde degeneration sets in.—*Med. and Surg. Reporter.*

#### THE TREATMENT OF CANCER OF THE RECTUM.

Dr. Lewis H. Adler, Jr., of Philadelphia, stated that the four recognized operations for cancer of the rectum were, extirpation, colotomy, posterior linear proctotomy and curettage. He called particular atten-



tion to the value of curettage in those cases of cancer in which the disease is within the lower three inches of the rectum, and its character of such nature as to allow of its more or less complete removal by the curette. In certain cases the combined operations of colotomy and curettage afford the patient more relief than where one or the other procedure is adopted singly. Under any plan of treatment in the majority of cases only temporary relief can be obtained. The indications for the operative treatment of rectal cancer may be summarized as follows:—Extirpation is to be considered only in those cases in which the disease admits of the hope of obtaining a permanent cure; colotomy, when the rectum is involved above the lower three inches of the bowel, and the disease has produced an appreciable obstruction; curettage or posterior linear proctotomy, or the two combined, may be employed in those cases in which the disease occupies the lower three inches of the rectum.—*Med. and Surg. Reporter.*

### THE TREATMENT OF BURNS.

The *Lancet* for February 22nd contains a report of a recent meeting of the Leeds and West Riding Medico-chirurgical Society, at which Mr. W. H. Brown read a paper on this subject. At the present day, he said, the treatment of burns was unsatisfactory. The death-rate from burns of all degrees in the Leeds General Infirmary was identical with that of twenty years ago.

The causes of death were shock and septicæmia, and the author recommended morphine to allay the former and to allow the parts to be carefully cleansed and dressed. To keep the patient warm, and to protect the burns from the air, he advocated the continuous use of a warm bath rendered antiseptic with boric acid. He thought that carbolic acid and mercury were too easily absorbed to be used. To lessen or to prevent septicæmia, he suggested that, where it was possible, after the administration of ether, the surgeon should cut or scrape away the tissues that appeared to be destroyed beyond a chance of recovery, and then apply an ordinary surgical dressing. At present, Mr. Brown said, he used eucalyptus oil, which was not toxic or irritating.

Mr. J. W. Teale stated that he had used chloroform when he applied the dressings, and thought that it decidedly lessened shock.

Mr. Prigdin Teale thought that carbolic acid combined with the sloughs and formed a kind of protecting covering which would be comparatively harmless.

Dr. Chadwick and Dr. J. B. Hall were strongly in favor of the method employed in Vienna, that of using continuous warm baths throughout the treatment.—*Med. and Surg. Reporter.*

UMBILICAL HERNIA IN INFANTS.—Dr. Cahier has studied this subject and reaches the following conclusions: 1. In the children of either the rich or poor the radical cure of umbilical hernia must be tried up to the age of eighteen months or two years, unless there be certain exceptional

contraindications. 2. In these young patients the use of the conical pad and the elastic spring are to be avoided. A hemispherical hard-rubber pad supported on a metal plate and held in place by a bandage is the best appliance. The apparatus should be changed every eight or ten days. 3. In children two to seven years of age belonging to well-to-do families, who are carefully looked after, an attempt may still be made to cure the hernia by bandage. 4. Children of the same age, whose parents are poor and consequently unable to give the necessary care to the child, or if they are negligent or ignorant, should not be subjected to this treatment if there is any tendency for the hernia to increase or to give trouble. 5. The umbilical hernias which persist after the seventh year, in spite of the careful use of the bandage, may be treated by other measures. The author favors surgical interference under the following circumstances: 1. Umbilical hernias of the newborn if strangulation occurs or if persistent gastro-intestinal troubles are induced which seem to be dependent upon the hernia. 2. The hernias in children of from two to seven years present analogous indications. 3. Children of this age belonging to poor families, who do not receive proper attention, if at the end of a year or eighteen months the hernia is still of the same size. 4. Hernias that persist after the seventh year, that are rebellious to treatment, and tend to increase in size. 5. If the skin covering the hernia is inflamed or ulcerated. 6. If the hernia interferes with the occupation that the person has selected. 7. Umbilical hernias with a large ring. 8. Those that are subject to strangulation or inflammatory accidents. 9. Those that cause pain and gastro-intestinal disorders, and consequently interfere with the development of the child.—*Revue de Chirurgie*.

MODIFICATION OF CHOPART'S AMPUTATION.—This winter, at St. Joseph's Hospital, Dr. Senn introduced a novel and important modification of Chopart's amputation of the foot. It is well known that after this operation the *tendo Achilles* often contracts and throws the end of the stump forward, so that the patient walks on the corner of the stump instead of the plantar surface. At best there can be no voluntary flexion or extension, and no elasticity to the step. To obviate this Dr. Senn dissected out the flexor and extensor tendons and brought them together over the stump, lapping them so as to give ample room for stitching them together. The patient, a young man, made an excellent recovery, with the most beautiful results. The tendons united so that perfect flexion and extension was secured. This result will certainly give the person a much more natural and elastic step in walking. This is the first instance on record where the tendons were united over the end of the stump in Chopart's operation, and it reflects credit upon the skill and ingenuity of Dr. Senn.—*Medical Sentinel*.

APKTHOUS STOMATITIS:—

R. Sodii Salicylatis ..... ʒ iss.  
 Aquæ Rosæ ..... ʒi.

M.S. Apply several times a day.

## MEDICINE.

IN CHARGE OF

N. A. POWELL, M.D.,

Professor of Medical Jurisprudence, Trinity Medical College ;  
Surgeon Out-door Department Toronto General Hospital ; Professor of Principles and  
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### CARDIAC THERAPY.

BY D. C. HAWLEY, A.B., M.D., BURLINGTON, VT.

I venture the statement that there is no department of therapeutics in which knowledge is so exact as in that relating to cardiac disease. Our knowledge of the action of the heart in normal as well as in pathologic conditions, ought to tell us why and under what circumstances a given remedy may be useful, provided we know its physiologic effects. The principal remedies which directly affect the heart and blood vessels are digitalis, strophanthus, strychnia, spartein, convallaria, caffein, glonoin, acnoite, veratrum viride, opium, bromids and ergot. Let us briefly review the physiologic action of some of these remedies, when administered in medicinal doses.

Digitalis stimulates the motor ganglia of the heart, increasing the force of the ventricular contractions. By stimulating the inhibitory fibres of the pneumo-gastric, it lengthens diastole, thereby giving time for the cavities to receive more blood. It also acts upon the vaso-motor ganglia in the medulla, causing contraction of the arterioles and thereby increasing arterial tension. It is a vascular stimulant raising arterial pressure, and steadying the heart by lulling it into long diastoles. Is digitalis a cardiac tonic as well as stimulant? It certainly increases the nutrition of the heart muscle by supplying it liberally with blood. The coronary arteries fill during diastole and when the heart is acting powerfully and steadily under the influence of digitalis, the increased volume of blood swells the aorta, which, in turn by a mighty recoil, fills the coronary arteries and carries food to every part of the heart.

Strychnia stimulates the vaso-motor centres, constricting the capillaries and causing an increase of arterial tension. It also stimulates the vagus, inhibiting cardiac contractions. Thus we see it has a double action in slowing the heart.

Cocaine effects the vaso-motor centres and the cardio-motor ganglia, increasing arterial tension and the force of the heart's action.

The action of belladonna is to increase the force and the frequency of the heart's action by stimulating the cardiac ganglia and by paralyzing inhibition. It also raises the blood pressure through capillary contraction, due to vaso-motor stimulation.

Ergot, by stimulating the vaso-motor ganglia, decreases the calibre of the arterioles and produces a marked increase in arterial tension, thereby causing the heart's action to become slower. It also acts on the unstriped muscular fibers in the arterioles, aiding their contraction. All the remedies thus far considered, viz., digitalis, strychnia, cocaine, belladonna and ergot may be classed as vaso-constrictors.

Aconite, by lowering the action of the cardio-motor ganglia, lessens the force of the systolic contractions and by stimulating the *vagus*, lengthens the interval between the beats. It also dilates the peripheral vessels, probably through vaso-motor depression, thereby lowering blood pressure and slowing the heart.

Veratrum viride depresses the vaso-motor centers, dilating the vessels and reducing vascular tension. By a direct effect upon the heart and its contained ganglia it lessens the force and frequency of its pulsations.

Glonoin increases the energy and rate of the heart's contractions and lowers vascular tension by widening the blood paths. The former is done by directly stimulating the heart, the latter by its action on the muscular coats of the arterioles, and not by depression of the vaso-motor centres. Aconite, veratrum and glonoin may then be classed together as vaso-dilators, but with this difference in their action, while aconite and veratrum depress the heart's action, glonoin increases it.

Strophantus slows the heart's action, lengthens diastole and increases the force of the muscular contractions, thereby raising arterial pressure, but does not affect the calibre of the vessels through the vaso-motors.

Convallaria, by direct action on the heart, lessens the frequency and increases the force of systole, thus raising arterial pressure. It does not affect the vaso-motors of the pneumogastric.

Caffein stimulates directly the heart, increasing its contractions in force and frequency. It causes dilatation of the arterioles, not by vaso-motor depression, but by an action upon the intra-vascular nerve ends (Semmola.) Large doses affect the *vagus*, decreasing the number of systolic contractions.

Cactus shortens and increases the energy of systole, raises arterial pressure and shortens the intervals between the beats. Under its use the pulse becomes quicker and stronger.

Sparteïn primarily increases the pulse rate, and the force of the heart. This increase of the heart's action is soon followed by a decrease of the same. The augmented rate is due to an action of the drug on the heart's muscle or its ganglia, and the decrease to stimulation of the cardio-inhibitory centres. Sparteïn increases the blood pressure by its action on the heart and by stimulating the central vaso-motor system, and subsequently decreases it by a depressing effect through the same channels.

Thus we see that strophanthus, convallaria and cactus have no appreciable effect on the calibre of the vessels, while the effect of caffeïn and sparteïn in this direction is less marked than is that of the drugs we have classed as vaso-constrictors. The effect of opium is to stimulate inhibition, producing a slow and full pulse with increased arterial pressure. Systole and diastole are both lengthened. Bromids lessen the force and frequency of the pulse, as well as arterial tension. It is claimed by

Hammond that bromids produce contraction of the arterioles of the brain, thereby causing cerebral anemia. In the study of cardiac therapeutics it is well to bear in mind that the heart is a double pump with normal valvular insufficiency on the right side and with perfectly closing valves on the left side; that the principal resistance to the flow of blood is in the arteries and arterioles, and not in the veins; that the capacity of the veins is double that of the arteries, and that the abdominal vessels when dilated are capable of holding all the blood in the body. By the use of the vaso-constrictors we increase arterial tension, and as a result send an increased quantity of blood through the coronary arteries, thus improving the nutrition of the heart muscle. In a dilated heart without compensatory hypertrophy, we may by increasing peripheral resistance and keeping it just within the power of cardiac contractions, bring about hypertrophy of the left ventricle, and thus restore the circulation to a nearly normal condition. This has been proved by Oertel. The effect of the vaso-constrictors may be carried too far, and so narrow the arterioles, as to send the blood so rapidly through the capillaries as to cut off nutrition from the heart. The administration of nitroglycerin, which has the power of dilating the capillaries, will, however, remedy this over-contraction. The vaso-constrictors increase peripheral resistance and lower the rate of the heart's action. The vaso-dilators, on the other hand, decrease peripheral resistance and lower the rate and the power of cardiac contractions.

Now the question arises, what working conclusions are to be drawn from these considerations? Let us try for a moment to apply the above data to some of the conditions which we daily meet. In mitral stenosis we have at the mitral orifice an obstruction to the free flow of the current of blood from the auricle to the ventricle. The orifice being narrowed, the auricle cannot pump the normal quantity of blood through it, in the time allotted, and in the attempt so to do, the heart works at an increased rate. Dilatation of the auricle follows, and there is a stasis of blood on the venous side of the heart while the vascular tension is lowered on the arterial side. What must be done to help that heart? We must increase the power of the ventricular contraction in order to overcome the effect of the dilatation, at the same time that we lengthen diastole, to give the auricle time to empty itself. We must also increase the blood pressure in the arteries for the benefit of the coronary circulation, and must work the blood over from the venous to the arterial circulation. If our findings in the physiologic actions of drugs are correct, here is a field for the use of either digitalis, strychnia, strophanthus, spartein, convallaria, or ergot, or a combination of two or more of them. In regurgitation at the mitral valves, we have the conditions above noted, with the addition of eccentric hypertrophy of the ventricle. Such a heart may be in great distress, putting in thirty to fifty extra beats per minute, with the veins full and the arteries empty. Systole is weak and diastole too short for the ventricle to fill with blood. The indications are plain; shorten and strengthen systole and lengthen diastole. To do this we must turn to the same remedies mentioned in speaking of mitral stenosis. Here is an opportunity to use the full physiologic effect of digitalis. Having

secured that effect, having restored the equilibrium of the circulation, it is probably better to combine glonoin with the digitalis, in order to cut out the vaso-constrictor effect of the latter. In some cases a combination of ergot, for its vaso-motor effect, with spartein or strophanthus, will accomplish all that is desired. The other drugs mentioned in connection with these lesions are valuable and play an important rôle in cardiac therapy, but having pointed out the general indications for their use, we will not attempt to do more at the present time. In aortic stenosis, so long as hypertrophy keeps pace with the obstruction and with the ventricular dilatation, all goes well. But when the compensation is broken, when the obstruction or the dilatation, or both, get ahead of the hypertrophy, then the ventricle is unable to send the full charge of blood through the narrowed aortic opening. At each contraction of the ventricle some blood is left within its cavity, and the blood flowing in from the auricle as usual, causes a surcharge of blood within the ventricle. This condition makes it impossible for the auricle to fully empty itself and here again we have dilatation resulting. Nature at once attempts to compensate by starting a hypertrophy of the left auricle; but this only adds fuel to the flame, for the increased power of the auricular muscle sends more blood into the crippled ventricle, which is already distended to such an extent as to destroy the compensatory balance. The effect upon the circulation is decreased arterial tension, and engorgement of the pulmonary and venous circulation. Now what are the indications? Plainly, to strengthen systole, shorten diastole and increase arterial tension. We certainly must not look to digitalis and its congeners to meet these indications. Cactus, caffein and cocain, from their physiologic effects may be expected to do much for us, and experience has proven their value in aortic stenosis. In aortic regurgitation we have eccentric hypertrophy of the left ventricle from a reversed current of blood from the aorta. Regurgitation becomes rapid and prevents the perfect filling of coronary arteries. The hypertrophy so increases blood pressure as to produce endarteritis and finally atheroma. Thus the heart muscle becomes impoverished and dilatation without compensation results. Regurgitation through the aortic orifices takes place during diastole. If we can shorten diastole and strengthen systole we are certainly doing something toward restoring the circulatory equilibrium. Again our physiologic findings point to cactus, caffein and cocain. We have it on so good authority as that of Dr. Reynold W. Wilcox, of New York, that cactus has proved itself, clinically, to be the remedy, par excellence, in aortic regurgitation. Lesions of the right heart being rare we will pass over their consideration. In cases where there is increased peripheral resistance as in pneumonia in the first stage, chronic disease of kidneys, etc., we find a special field for the use of the vaso-dilators, viz., aconite, veratrum and nitro-glycerin. In the first stage of pneumonia we have engorgement of the blood vessels of the lung, with increased action of the heart. If we give veratrum, we bring down the heart's action and dilate the blood-vessels throughout the body. We take the blood away from the lung, and we practically bleed the patient into his own vessels. I am well aware of the important rôle played by

hygienic, dietic and mechanical agents in cardiac therapy. However, a consideration of these in detail is entirely without the scope of this paper, in which I have endeavored to call attention to the scientific use of some of those agents, which, strictly speaking, must be set down as secondary to a proper regulation of rest, diet and regimen, in the treatment of cardiac disease.—*Jour. Am. Med. Asso.*

### CHOLERA INFANTUM.

A complaint peculiar to infantile life, too well known to need further description. I have been requested to give my treatment for this scourge of the nursery. I will not stop to give its pathology or morbid anatomy. What the profession needs is the simplest and mildest treatment that will relieve the little sufferers in the shortest time; one of which, at least, I hope to give.

The first five years I practiced, I treated these cases as I learned to from the books and lectures. When my little patients died I wondered why they did not get well, for I knew my treatment was orthodox. When a poor, little emaciated one lingered through the summer into autumn, and finally got well, I know it was despite both disease and treatment.

Among my patients was our own little Ruby, a bright, sweet darling of fourteen months, stricken July 2nd. I exhausted the remedies laid down in the books and those in my memoranda taken down at college, then called to my assistance the ablest physicians available. They said I had done all they could do, and offered nothing new. One, a diplomat, said, he had obtained the best results, in such cases, from the use of Mrs. Winslow's Soothing Syrup, advised me to try it, and went away. In my despair, I cried out, "Is this all?" Is this the end of all hope of assistance, in this hour of my great distress.

July 28th she ceased to be. We laid her away, and might well have written on her little monument, whose spire points heavenward, "Died early, because they knew not what to do."

Then I began to inquire of every doctor I met: What is your treatment for cholera infantum or summer complaint in children? They replied: Opium, morphine, laudanum, paregoric, Doveri, cinnamon, cloves, allspice, nutmeg, kino, blackberry-root tea, white oak bark, raspberry leaf—the whole catalogue of astringents—made into some form of powder, decoction or syrup. The same old, old treatment that has sent, and is still sending, multiplied thousands of lovely, innocent children to premature graves, that ought to be saved; and many of them would get well if they never saw a doctor, or rather, if a doctor never saw them. Hard words to say! but I have been over the battle-grounds; I have witnessed the last struggles; I have heard the weeping of mothers and friends, who anxiously watched for the last breath.

I have paid dearly for my knowledge. I am still in a position to look over the field, read the results, and know whereof I speak. I had tested

the treatment laid down in the standard works, and those given me by my teachers, and found them disastrous failures. I had applied to professional gentlemen with whom I met, and some of them appeared to think they had about reached the top round, and, from them, learned nothing new under the sun. I was then, comparatively, a young man. I determined to pull out of the rut made by that old professional cart, that went out from Philadelphia over one hundred years ago, and, if possible, blaze a way to the goal of my ambition, to relieve and save these little sufferers.

Under astringents, I found the inner coating of the stomach wrinkled and hard, like that of chicken's gizzard; the small intestines the same, with occasional short spaces distended with gas. No digestion, absorption or assimilation could take place under such conditions. (If you will cut down here after death, gentlemen, you will find, after using your puckering treatment, a similar condition.)

I began to think for myself: There is evidence of irritation here, manifest at both ends of the line. First, by the vomiting, and second, the diarrhœa. What then are the indications?

The answer is plain. First, control the irritation, and second, remove the cause. To control vomiting, one-eighth grain tablet of calomel every hour until four are taken. Follow with teaspoonful doses of castor oil, or pure olive oil, in which is mixed three to five drops of Battle & Co.'s Bromidia, every two hours, until it operates on bowels, and be sure that it *does operate, too*.

Then give every two or three hours from half to a teaspoonful, according to age and emergency, of the following:

R.—Aquæ calcis, . . . . .	1	ounce.
Mistura cretæ, . . . . .	1	ounce.
Syrup acaciæ, . . . . .	1	ounce.
Bromida, . . . . .	$\frac{1}{2}$	ounce.
Bismuth sub nit., . . . . .	$1\frac{1}{2}$	drachms—M.

Sig.—Shake well before using.

Repeat the oil every morning *till it operates*, and follow it as before. If the Bromida in this formula is not sufficient to secure quiet and sleep, I give enough of it in addition till it does, always properly diluted. In extreme bad cases, with "brain symptoms," I depend entirely on Bromida, and it has never failed me. I have given it in half teaspoonful doses every hour till the desired effect, with no unpleasant results.

Observe proper rules of feeding and bathing and the little patient is usually all right in a few days. Since I have adopted and followed this course, now about twenty-five years, I have not lost a case of cholera infantum or summer diarrhœa, and my records will show that I have treated, probably, as many as any one in the same section of country.

I want to say here, that I have saved the lives of more children, of all ages, with Bromida, than any other remedy I have ever used, and I have used it ever since it was first introduced. I would no more think of going among the little ones without a bottle of it than I would of going among the "Haw-eaters" of the Missouri Valley, without a bottle of



quinine. I know how many feel from what they write about so-called proprietary remedies, but "what I have written, I have written." "The proof of the pudding is in chewing the string;" chew the string, gentlemen, and then tell us what you know.

When doctors learn that medicines never cure any disease, but may only remove the cause, that the symptom may restore itself, then there will be a great revolution in our medical armamentarium, and the manner of using, to obtain the desired result.—J. M. Duncan, M.D., in *Med. Brief*.

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ALBUMINURIA CASTS AND BRIGHT'S DISEASE.—Shattuck (*Boston Med. and Surg. Jour.*), has examined the urine of patients seeking his advice for various ailments. He has used boiling with additions of nitric acid and the Heller test, and considers them the most satisfactory.

He concludes his article as follows:—

(1) Renal albuminuria, as proved by the presence of both albumin and casts, is much more common in adults quite apart from Bright's disease or any obvious source of renal irritation than is generally supposed.

(2) The frequency increases speedily and progressively with increasing age.

(3) This increase with age suggests the explanation that the albuminuria is often an indication of senile change.

(4) Though it cannot be regarded as yet absolutely proved, it is highly probable that faint traces of albumin and hyaline and finely-granular casts of small diameter are, after 50 years of age, of little or no practical importance.—*Indian Lancet*.

TOXIC HYSTERIA.—Luhrmann (*Archiv de Neurol*, November, 1895) points out that toxic hysteria is more common than is usually supposed. Of 60 cases of hysteria in men, alcohol was the exciting cause in 18. Alcoholic hysteria is similar in all points to hysteria from other causes. Hymianæsthesia has frequently been observed, also concentric diminution of visual field, loss of color vision, and scotoma. The combination of epileptic with hysterical convulsions in chronic alcoholism was noticed. Hysterical attacks are especially likely to be brought on by a fresh drinking bout in the subjects of chronic alcoholism, in whom also traumatic hysteria is especially liable to occur. Similar manifestations of hysteria are also met with after chloroform narcosis, and in subjects of the morphine habit.—*Brit. Med. Jour.*

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ADVICE TO MEDICAL WRITERS.—The editor of the New York *Poly-clinic* offers a semi-decalogue to those of its friends who send to it carelessly written articles. As those friends will not have time to look at the hints, we will print them for our own use and for that of our friends—the readers of papers. The *Polyclinic's* five cardinal points for authors are: "1. In your writing be, above all things, *purposeful*; afterward, concise, relevant, definite. 2. The subject selected should contain but one definite line of thought; should not be trite; should be one in which you are personally interested; if argumentative, one in which you have con-

victions. It should be suited to your abilities and to your opportunities for forming a correct judgment, and should be no broader than the essay itself. 3. Make an outline your subject; it will enable you to read up accurately and profitably; it will afford mental discipline. 4. Be careful to pay attention to the elegance of your language; to such little things as correct paragraphing and punctuation. 5. Above all, remember that the analytical writer is the strong writer." In the body of the article the editor presents five considerations, minor, to him, apparently; but some of them of prime importance to audiences that need to sit and not get weary over *details and details and details*. These five other points, in our own language, may be condensed as follows: 1. Your audience should not be expected to do all the analyzing of your cases. 2. You need not go back to Galen and Avicenna and Sigault in every essay. 3. Where a similar line of therapeutics has been employed for a series of cases, the intelligence of your audience may be assumed to be sufficient to supply some of the gaps, as you pass with lighter hand over the later cases. 4. Make your preface short. "I will grant you," says the editor, "that there is a sort of hereditary precedent for scientific men, as a rule, to wander afield in their discussions, and to indulge in more or less verbosity of speech; but the writer who, after an intelligent discussion of the subject, brings all the evidence to bear upon a definite conclusion, is bound to be the most respected, while he who deals largely in words, sometimes utterly lacking in definiteness, will become more and more a bore, as medicine continues to make rapid progress toward becoming a science rather than an art." 5. Take down your long unused works on rhetoric and logic if you feel that you have fallen into careless ways of composition or of argument. The admonitions may be summed up in a brief commandment: Put yourself in the place of your audience as you pass along from point to point in your dissertation; be at once objective and subjective. Moreover, some of our ever-welcome medical writers find it not beneath their position to enliven their production with a dash of color of humor or personal narrative. But this is not always possible, the subject not warranting it, and with some it is impossible, the mental build of the author forbidding it.—*The Jour. Am. Med. Assoc.*

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CARCINOMA OF THE STOMACH.—Dr. Klenew, *Med. Times*, has summarised his opinions on the subject of gastric carcinoma as follows:—1. The treatment of these tumors differs in no respect from that of cancer elsewhere, that is to say, it is purely surgical. 2. Operation is to be recommended, when possible, before the tumor is palpable. 3. Examination should only be made under deep narcosis, and an exploratory incision made if required. 4. Those cases only should be recommended for resection of the pylorus, where the tumor is freely movable, and there is no metastatic involvement. 5. If these conditions are not present, the formation of a fistula between the stomach and jejunum is indicated. 6. This operation should not be delayed until the patient is nearly dead from starvation, and the knife used as a last resource, for the mortality is then much greater.

## OBSTETRICS AND GYNAECOLOGY.

IN CHARGE OF

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### TREATMENT OF PELVIC SUPPURATION BY ABDOMINAL SECTION WITHOUT HYSTERECTOMY.

BY REUBEN PETERSON, M.D.

For the purpose of this discussion the term "pelvic suppuration" will be restricted to purulent or cheesy collections within the tubes or ovaries, with or without an accompanying involvement of the peritoneum and cellular tissue. The true pelvic abscess, or a purulent inflammation of the pelvic cellular tissue following puerperal infection without involvement of the tubes and ovaries, will not be considered.

Our subject will naturally be treated from two standpoints:

1. What cases of pus in the pelvis shall be attacked by the abdominal route?
2. Provided that the abdominal route be indicated, in what cases will removal of the uterus be demanded?

The work of Péan, Jacobs and others in the treatment of pelvic suppuration by vaginal hysterectomy has been productive of a great deal of good. It has shown us what can be done by the vaginal route, if enough time be spent in acquiring a most difficult technique. It has demonstrated the possibility of vaginal exploration for diagnostic purposes, and, finally, it has brought prominently to our attention a fact long known, but of recent years somewhat lost sight of—that with a patient *in extremis* from long-continued pelvic suppuration, evacuation of the pus should be sought through the vagina rather than through the abdomen, and thus time be given the patient to recuperate before the more radical operation be resorted to. But, like all surgical procedures which have given good results in the hands of experts, the vaginal operation has been employed too frequently and in unsuitable cases. It has become almost a fad in some localities, so that we hear of men who have won enviable records as abdominal operators giving up the suprapubic route and working entirely from below. Not that I would do away altogether with these extreme views or methods. They answer their purposes in calling attention to the claims of their adherents and enabling the surgical world to select for permanent use what is really good and lasting.

In the treatment of pelvic suppuration the abdominal route should be chosen:

1. Whenever there is a chance of applying the principles of conservative surgery.

2. Whenever bilateral pus sacs are present and complete enucleation is desirable.

3. Whenever the pus points high up in abdominal cavity.

1. *Conservative Surgery through the Abdominal Route.*—Granting all that the advocates claim for the vaginal route, there is little doubt but that the suprapubic method offers better opportunities for the application of methods tending toward the preservation of the whole or part of the appendages. This is especially true where there exists a decided collection of pus in the tube or ovary on one side and a doubtful condition upon the opposite side. Here the advantages of an abdominal incision for the inspection of the doubtful appendages are marked. The appendages on the less affected side are usually bound down by adhesions from former attacks of pelvic peritonitis, even if there be no formation of pus. The abdominal route and, if need be, the Trendelenburg position enable the operator not only to feel but to see the adhesions. In this way the latter may be broken up with but slight impairment of the integrity of the tube or ovary. As Baldy stated recently before the Philadelphia Obstetrical Society, a majority of the cases of inflammatory pelvic conditions will not reveal fluid pus within the appendages. The pus has in many cases become cheesy and the tube wall thickened by repeated attacks of pelvic peritonitis. The uterus may be fairly movable, but the appendages, one or both, will be bound down to the pelvic floor by dense adhesions. It requires the greatest judgment, acquired only by experience, to determine which tube and ovary, when released from its adhesions, can be safely left. How often have we debated this question upon the operating table with the released tube and ovary between our fingers! And in more than one instance where it was deemed best to leave the appendages on one side, the result has proved the wisdom of the decision. Can any one say that this decision could have been arrived at as well had the operation been performed through a vaginal incision? Those who have operated by both routes, who have seen the difficulties attendant upon the breaking-up of dense adhesions, will not hesitate in their choice of procedures when there is a chance of preserving some portion of the appendages.

2. *Whenever Bilateral Pus Sacs are present and Complete Enucleation is desirable.*—It is my firm conviction that clean pelvic surgery should be practised whenever practicable. In other words, whenever it seems desirable to enucleate a pus tube, instead of merely incising and draining, every particle of the diseased wall should be removed. This can be accomplished much better and with less danger to the adjacent organs by the abdominal than by the vaginal route. A careful study of the work of the best operators by the vaginal route will show many incomplete operations. The purulent tubes and ovaries are removed whenever possible, but many are left behind and are a menace to the patient ever afterward. The walls of these abscesses are foreign bodies and have no place in the pelvis.

In inflammatory pelvic conditions bowel adhesions are the rule, not

the exception. These can be treated much better from above. In fact, according to the statements of the vaginal operators, if the bowel be opened high up in the attempts to separate the adhesions, the abdomen must be opened for the repair of the rent if the general peritoneal cavity has been entered. An abdominal operation does not consist merely in the enucleation of the pus sacs. The intestines may be adherent to the omentum, uterus, and one another, and a complete operation means the releasing of these adhesions so that future suffering may be avoided.

In not a few instances of bilateral pelvic suppuration the appendix is involved. In case of this complication the vaginal operator is decidedly handicapped. The condition either escapes his notice, or, if discovered, it cannot usually be safely dealt with save by an abdominal incision.

3. *Whenever the Pus points high up in the Abdominal Cavity.*—Occasionally we meet with an exception to the general rule that a pus tube is to be found resting upon the pelvic floor and easily accessible through the cul-de-sac of Douglas. It has been my experience that in pyosalpinx and ovarian abscess following childbirth the pus sacs are situated high up in the abdomen and are practically inaccessible through the vagina, unless a comparatively unaffected pelvic cavity be traversed to reach them. These cases should be treated by abdominal incision and the pus sacs enucleated or drained, according to the condition of the patient; for in many instances these large abscesses which point high up in the abdomen occur in women weakened by severe septic absorption, which renders enucleation extremely hazardous. In such cases incision and drainage will be demanded and recourse will be had later to the radical operation. I shall leave to those to whom that part of the discussion has been assigned the description of the cases of pelvic suppuration which *should* be attacked through the vagina, and pass to the second division of my subject, namely: *Provided that the abdominal route be indicated, in what cases will removal of the uterus be demanded?*

If a uterus be so diseased that its retention after bilateral removal of the adnexa is a barrier to complete restoration to health, it certainly is good surgery to remove it at the first operation. The true surgeon is not operating according to any fixed rule. He is resorting to the knife for the cure of his patient and the preservation of as many organs or as much of any one organ as is consistent with the well-being of his patient. His judgment should be unbiassed by a predetermination to apply any fixed rule to all cases. If the rule does not fit the particular condition present, so much the worse for the former. The interests of the patient are paramount. For this reason it is not good pelvic surgery to establish a universal rule that whenever the appendages are removed for bilateral inflammation the uterus also should be sacrificed; for this rule, if strictly enforced, will surely conflict with a fundamental surgical maxim that no organ should be sacrificed except upon well established pathological grounds.

Experience has shown us that many of our pus cases requiring bilateral removal of the adnexa do not regain their health; that these patients suffer from purulent uterine discharges, from metrorrhagia, and from severe reflex symptoms arising from the diseased uterus, and

that these symptoms persist in spite of curettage before and after the abdominal operation. On the other hand, we find that there are many recoveries, complete restoration to health, with no persistent uterine or reflex symptoms, when purulent collections within the appendages have necessitated their removal. To my mind it is simply a begging of the question, an intellectual shirking of a difficult surgical problem, to adopt a universal rule that the uterus should be removed whenever both appendages have been sacrificed. Polk and others claim that the uterus under these conditions is a useless organ and should therefore be sacrificed, because *some* cases fail of cure without this additional procedure.

We have passed beyond the developmental stage of hysterectomy. The operation has been so perfected that in the hands of experts the mortality is not increased over that attendant upon bilateral salpingo oophorectomy. On the other hand so much better, in my experience, is the convalescence in cases where the uterus has been removed that it is a temptation to do so in every case. But the conservative surgeon must needs hold his hand. We should not talk too lightly about this functionless uterus after its appendages have been ablated. There is a possibility that its importance and influence over other parts of the body is but little understood at the present time, and that future investigations will make us repent having sacrificed the organ except for the strongest pathological reasons.

Removal of the uterus means that we have no hope that the less radical measures of treatment of this organ will prove of avail. I do not believe that we are willing to make this acknowledgment in every case where both appendages require removal. Combined clinical, pathological, and bacteriological investigations will soon place us in a position where we can decide upon the operating table which case will require hysterectomy and which will not. The recent work of Wertheim, Doderlein, Werth, and others has greatly increased our knowledge of the origin and course of endometritis. It has demonstrated that gonorrhoeal endometritis especially is a most serious disease, both from its tendency to spread to the tubes, ovaries, and pelvic peritoneum and also because of the frequency with which the muscular wall of the uterus is affected. But I am convinced that the position of Schauta is untenable when he claims that all of the internal female generative organs should be sacrificed when it can be shown that a pyosalpinx is due to gonorrhoea. Yet, at least, he is more logical in his reasoning than some other operators, because he frankly admits that in the presence of gonorrhoeal endometritis we are powerless to save the appendages on the opposite side. The same men who would advocate removal of the uterus when both sets of appendages have been ablated would not urge or practise hysterectomy when one side is unaffected, even though a history of gonorrhoea could be clearly proved. Yet if the endometritis and metritis can be cured in the one case, why not in the other? For my own part I do not believe we are powerless, in the presence of gonorrhoeal disease of the uterus and appendages, to effect a cure of the former by no means short of the radical operation. My own clinical experience leads me to think that a thorough removal of the endometrium by the sharp curette and subsequent drainage will cure many cases of endometritis proved beyond doubt to be gonorrhoeal.

There are but four classes of cases where I would consider it justifiable to remove the uterus when both appendages have been sacrificed for purulent disease :

1. When the uterus is so diseased that less radical procedures than hysterectomy probably will fail to relieve the patient of subsequent suffering.

2. When the appendages are tubercular. In these cases we are dealing with a serious disease which should be treated by the most radical measures.

3. Where the peritoneal covering of the uterus, and even the body of the organ itself, has been badly injured by the enucleation of the purulent appendages. Here the danger of subsequent bowel adhesions and intestinal obstruction might decide one to perform hysterectomy.

4. In some bad cases of pus tubes it may become necessary to remove the uterus for the purpose of securing free vaginal drainage.

In all other cases I would advocate a thorough curettage and retention of the uterus.—*American Journal of Obstetrics.*

### SUDDEN DEATHS IN THE PUERPERIUM, WITH REPORT OF A CASE.

BY WILMER BRINTON, M.D.

In calling the attention of this Society to the causes of sudden deaths in the puerperium, with the report of a case coming under my notice during the past year, I begin the subject with a quotation from the "American Text Book of Obstetrics," viz : "No accident can happen to a woman that carries with it so much horror as sudden death at any period of the puerperium, and no physician, however great his reputation, can escape the criticism which invariably follows even when this accident is absolutely beyond his control. He should always know the causes of rapid or sudden death in the puerperium, and by explaining the utter impossibility in most cases of foreseeing or combating the death he can partially avert unjust and unkind criticism." If a physician has had the opportunity to acquire the proper theoretical knowledge of the science and art of obstetrics, and has had this theory illustrated and strengthened by proper and sufficient clinical experience, he feels competent to pilot his patient through the dangers of parturition. The knowledge he has of antiseptic midwifery, and the every-day application of the same in practice, throws around his patient before, during, and after labor a safeguard of incalculable value. Even the dangers which may arise from such complications as eclampsia, post-partum hemorrhage, contracted pelvis, placenta previa, abnormal presentations and positions, etc., may be warded off by the skill and knowledge of an intelligent and conscientious obstetrician. But the sudden death in the puerperium comes to his patient in such an unexpected and alarming manner that she is, in the great number of cases, absolutely beyond all hope before he can make use of any

remedy. I wish in this paper to differentiate rapid or sudden death which may occur immediately or soon after the birth of the child from shock, hemorrhage, rupture of uterus, etc., from the sudden death which occurs in the first, second, or even as late as the fourth week of the puerperium, and my remarks shall be devoted to this class of cases. Sudden deaths occurring late in the puerperium must be comparatively rare. The case I shall record is the only one coming directly under my notice in nearly two thousand labor cases occurring in hospital and private practice, with the exception of being called off of the streets some years ago to see a puerperal woman die just as I entered her bedroom door. The history of the case was that her physician had seen her that morning, and, as it was the tenth day of her lying-in period, he gave her permission to get out of bed later in the day, which she did. She dressed herself in a loose wrapper, nursed her child, and was attending to some minor duties in a sitting position, when in an instant she had great difficulty in breathing, her face became cyanosed, she had some slight convulsive movements, became unconscious, and died within twenty minutes from the onset of the distressing and alarming symptoms.

There are various causes of this calamity. Without wishing to inflict upon this Society a review of the literature upon the subject, I would say that one of the latest authorities claims the most frequent cases of sudden death in the puerperium, arranged in the order of their relative frequency, are embolism, entrance of air into the uterine veins, heart failure due usually to organic heart disease. But deaths have been reported from rupture of the heart due to fatty degeneration or to acute myocarditis. Sudden deaths have occurred from joy, anger, sorrow, fear, etc., the heart action in these cases being interrupted by energetic and persistent excitation of the inhibitory nerves of the heart. A great many of the older authorities insist that primary and spontaneous coagulation of the blood in the pulmonary artery occurs, and this accident is attributed to the excess of fibrin and water in the blood during the puerperium, to hemorrhage, to syncope and the diminished force of the blood current, and to the quality of the blood, changed by effete materials or by sepsis. More recent writers, however, favor the view that embolism usually, if not always, precedes the occurrence of thrombosis, and they support this belief by the uncertainty of the pathologist's knowledge of a primary thrombosis in the right side of the heart and in the pulmonary artery, and by the facts that in about half of the cases a peripheral thrombus has been demonstrated; that the accident commonly occurs after dislodgment of a peripheral thrombus in either a femoral, an iliac, or a uterine vein following a sudden effort, such as assuming an upright posture, laughing, straining at stool, etc., any of which efforts do not cause thrombosis, but may loosen a thrombus; and, finally, that thrombosis of the pulmonary artery should occur more frequently, since the asserted predisposing causes are so commonly observed in the puerperium. Playfair, in a series of papers "On Thrombosis and Embolism of the Pulmonary Artery as a Cause of death in the Puerperal State," which were first published in the London *Lancet* over twenty years ago, claims, from a careful analysis of twenty-five cases of sudden death after delivery in which accurate



post-mortem examinations had been made, that cases of spontaneous thrombosis and embolism may be divided from each other by a clear line of demarcation. In seven of these cases there was distinct evidence of embolism, and in these seven cases death occurred at a remote period after delivery, in none before the nineteenth day. This fact Playfair considers contrasts in a most remarkable manner with the cases in which the post-mortem examination afforded no evidence of embolism. These amounted to fifteen out of the twenty-five cases, and in all of them, with one exception, death occurred before the fourteenth day, often on the third or fourth. This would seem to prove that in the first class of cases time is required to admit of degenerative changes taking place in the deposited fibrin leading to separation of an embolus, while in the second class the thrombus corresponds in time, and to a great extent in cause, to the original peripheral thrombosis from which in the former the embolus was derived.

Playfair has more recently added other evidence to prove that in the great majority of cases sudden death in the puerperium is the result of a primary and spontaneous coagulation of the blood in the pulmonary artery. Without denying the possibility of the occurrence of sudden death from a primary and spontaneous coagulation, yet my opinion is that the modern methods of investigation, including accurate and thorough post-mortems, microscopic research, etc., will in the future prove that the larger number of sudden deaths in the puerperium are due to a thrombosis in the uterine, pelvic, or femoral vein. Then from some exciting cause an embolus is detached, and, passing to the right heart, is arrested in the pulmonary artery, causing death within a short time.

Another recognized cause of sudden death during the puerperium is the entrance of air into the uterine sinuses. In the literature of the subject a great many cases are found reported where a post mortem proved air embolism in the uterine veins, the result of injections into the birth canal and from other causes. Still, the presence of air in the veins at post-mortem does not prove death from air embolism, for Welch and Nuttall have shown this may originate from a gas-producing bacillus, named by them "*bacillus aerogenes capsulatus*." The symptoms of the ailment under consideration vary. When a large-sized thrombus obstructs the pulmonary artery death may be instantaneous, as in the case I shall report; or in other cases it may be preceded by precordial oppression, extreme dyspnea, cyanosis, the pulse becoming small, rapid, and irregular. In other cases, if the embolus is small, the onset of symptoms is not so sudden and not so severe, although they are similar, in which cases death may occur after several days, or, very rarely, recovery may occur. In cases of entrance of a large amount of air into the uterine veins, respiration and circulation are immediately and desperately embarrassed. The patient may utter a cry of alarm and at once become unconscious, with or without convulsions. It is supposed in this class of cases that the cause of death is probably mechanical interference with the circulation.

Treatment in many of these cases will be of no avail; in the two cases which have come under my notice death took place almost instantaneously. If seen in time the patient should be kept absolutely at rest; stimulants

should be given by the mouth, and hypodermatically; carbonate of ammonium in decided doses has been recommended, especially in cases where the patient lingers for some time after the onset of symptoms.

The case which I wish to report is as follows: Julia M., of Mount Savage, Md., was admitted to the Maryland Lying-in-Hospital March 8th, 1895, with the history of pregnancy, and giving as the first day of the last menstrual period August 15th, 1894. She was unmarried, a primipara, aged 26, housemaid by occupation, a native of Maryland; family history good, she being one of eleven children, all living, mother living, father dying with acute pleuritis some years previously. The patient began her menstrual life at 14 years of age, and, with the exception of some of the ailments incidental to childhood, and a severe attack of gripe four years ago, she never has been sick. A physical examination made upon her entrance into hospital found all of the organs of the body in a good condition. Her pulse, temperature, and respiration were normal. No sugar or albumin was found in the urine. There was slight edema of the lower extremities. The fundus of the uterus was midway between the navel and ensiform cartilage. After remaining in the hospital about six weeks, during which time her physical condition seemed to be fully that of the average woman so far advanced in pregnancy, she began having labor pains at 9 p.m. April 13th, 1895, and was delivered at 10.15 a.m. April 14th. She was attended by our resident physician, Dr. L. G. Taylor, now of Perryville, Md., and four or five students were present. The labor took place under the most rigid antiseptic precautions. The first stage lasted ten hours and thirty minutes; the second, two hours and thirty minutes; the third, ten minutes; the placenta being expelled by the Credé method. No tear of the perineum was noted. The child, a male, presented by the vertex in the left occipito-anterior position. At birth it weighed six and three-quarter pounds and was nineteen and a half inches in length. The lying-in period of the patient was uneventful. In visiting the ward from time to time the resident physician called my attention to the fact that this woman's pulse continued rapid, and several times we interviewed and examined her. Involution was progressing favorably. She had plenty of nourishment for her child. Her lochia were of the proper amount, free from odor. Her temperature, which was taken morning and night, varied from 98° to 100.2°, the general average being 99.4°. The pulse varied from 86 to 106, with a general average of 96 per minute. At no time did she complain of either pelvic pains or pains in her limbs. Indeed, at no time during her puerperium did she complain of one unpleasant symptom. Owing to her rapid pulse we decided that she should not get out of bed on the tenth day, as is the usual custom with our hospital patients if they are doing well. She objected to the delay, but when she was assured that it was for her ultimate good and she would be kept in bed only a few days longer, she assented willingly. On the afternoon of April 24th, 1895, when she was well in her eleventh day, she sat up in bed to nurse her child; at the same time she was conversing with one of the nurses who was in the ward. She continued to nurse the child while the nurse left to go down-stairs to another ward. Within two minutes

from this time the nurse was called up-stairs in great haste by a patient, who said, "Julia is dying." The house physician was sent for immediately. He found the radial pulse gone, the face cyanosed, great difficulty of breathing. He gave a hypodermatic injection of nitroglycerin, but the woman was dead within five minutes from the onset of the symptoms. It was then ascertained that after the nurse left the room she continued to suckle the child for a minute or so longer, then turned to place it in bed, when she uttered a distressing cry, placed her hand over the region of the heart, fell back in bed, became rapidly unconscious, and was found in this condition a minute later by the nurse and house physician. Owing to her living at a distance from Baltimore, permission could not be obtained to hold a post-mortem. The immediate cause of death is unknown, but from the history of her lying-in period I am of the opinion that the patient died of a primary and spontaneous coagulation of blood in the pulmonary artery.—*American Journal of Obstetrics.*

**HYDROCELE OF THE LABIUM MAJUS.**—A prolongation of peritoneum may reach below the mons veneris through the inguinal ring, covering the round ligament. This peritoneal investment may become adherent about the ring, and a transudation of serum occur into the cavity thus formed. This condition is then known as hydrocele of the labium majus. It may be of several varieties (Edwards): 1. That in which there exists a patulous canal of Nuck. The fluid is excreted from the peritoneal surfaces covering the ligament, and is free to return within the general peritoneal cavity. 2. The sac may be entirely cut off from the abdominal cavity, and dropsy occur in this closed sac. 3. The cellular tissue of the labium majus consists of two layers, which are prolongations of the superficial abdominal fascia. These two layers are considered analogue of the dartos tunic, and between them a serous tumor may form. This is considered by some to be true hydrocele in woman. 4. The substance of the round ligament itself may be the site of a cyst. The gubernaculum of Hunter in the fetus becomes the round ligament in the female. This fetal structure is at first hollow, and there may be a persistence of this fetal condition which allows the formation of a cyst. Eisenhart has collated forty-eight cases of hydrocele in the female, and finds that twenty-nine were upon the right side, and nineteen upon the left. He considers traumatism and congenital defect to be the most frequent causes. Smith believes that the disease is not so rare as is stated; during a period of four years, he says five cases have been operated upon in the Tottenham Hospital. The treatment of hydrocele feminina is operative. Expose the cyst by a linear incision, ligate the neck, and enucleate. The wound is to be closed by superimposed layers, as in the closure of hernia. Simple puncture of the hydrocele is of little avail.—*Am. Jour. Obs.*

## NERVOUS DISEASES AND ELECTRO-THERAPEUTICS.

IN CHARGE OF

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### CEREBRAL HYPERCEMIA FROM LOSS OF SLEEP.

In 1888, Lieutenant L., aged 28, was admitted to hospital in consequence of having been on ship duty for five consecutive days and nights.

He had paroxysms of cerebral hypercemia coming on suddenly several times a day, though there was some premonition, such as vertigo and headache. When having such symptoms he could walk a short distance, a half block or so, with staggering gait, but then had to lie down or fall. Upon lying down or falling he would flex his body strongly and would become unconscious. The torpor would be so deep that he could not be waked, but in an hour or so would wake voluntarily and remember what had occurred up to the moment of such sleep.

When these attacks came on, his face became flushed and during the period of unconsciousness cyanosed, but upon waking would resume its natural color.

Under medication it was found that nothing would abort the paroxysms, but a large dose of bromide of potassium or soda, given promptly when the face began to flush, would render the paroxysm less severe, though the after effect seemed to be injurious, as it left him in a semi-torpid condition for some time after the ordinary duration of the attack. After several days' treatment he happened one day, when a paroxysm was coming on, to be in the office where galvanism was accessible, and I quickly applied a current of 5 ma. to head, moving the positive pole over the forehead and holding the negative steadily at the back of the neck, and continuing the application for five minutes.

He experienced immediate relief; the flushing and headache disappeared and the attack was averted. From this time on the same electrical treatment was given whenever he had any flushing of face or headache, and always with the same salutary effect. In the course of a few days it was found that a seance of a minute only was all that was required. After two weeks of such treatment the patient seemed perfectly well, but the momentary application of the current was made occasionally when the patient felt the least anxiety about himself for some two weeks longer, when he was discharged convalescent, but was advised not to do any mental work for a long period. He, however, soon after resumed his studies, visited Washington, was examined and promoted. He has since been well and in active service.—*Med. Times.*

**PAROXYSMAL HEADACHES.**—In three cases of periodic headaches I had occasion to test the efficacy of ergot, as recommended in this morbid condition by Thomson. The subjects were of a more or less nervous temperament, and had suffered for a considerable time from frequent and violent attacks of headache; they gave no history of malaria. Quinine, as well as most of the analgesics and antinervines known, had been tried in vain, when I began to administer ergot. The beneficial effect soon became manifest. The patients were completely cured after having taken daily one drachm of fluid extract ergot, mixed with three drachms elixir of cinchona, for three consecutive days. This did not occasion nausea or vomiting, which fact I ascribe to the circumstance that I employed three times as much elixir cinchona as fluid extract ergot.—CAPPELLARI, in *La Semaine Médicale*.

**TUMOR OF THE SPINAL CORD WITH UNUSUAL CLINICAL PHENOMENA.**—(Wiener medicinische Klub, published in *Wiener medicinische Wochenschrift*, No. 6, 1896.) By. H. Schlesinger, M.D.

Some time after traumatism paralysis of the right upper and paresis of the right lower extremity developed, with great atrophy of the muscles of the right shoulder, which made movement at this part impossible. The head could only be slightly bent. The great atrophy of the shoulder contrasted notably with the excellent development of the musculature of the forearm and hand. The reflexes were slightly increased in the upper extremities and were abnormally vigorous in the lower. On the entire body tactile sense was normal, sensibility to pain was somewhat increased, but over the shoulder musculature and the right deltoid thermal sense was notably decreased. Except a slight ataxia of the right upper extremity there was no disturbance of the muscular sense. Later the muscles of the left shoulder became atrophied, and severe pain developed, radiating into the right hand and posterior part of the head, especially on the right side.

There was no vesical nor rectal disturbances. Later in the disease the patient had convulsive attacks, lasting five to ten seconds and involving the entire body, accompanied by opisthotonos and trismus, and without loss of consciousness.

The radiating pains, the hyperalgesia, and the rapid course were contrary to a diagnosis of syringomyelia.

The paralysis and atrophy indicated involvement of the second to the fifth cervical roots.

On account of the great prominence of the sensory systems and of the probability of a lesion of a transverse nature, the diagnosis of tumor of the cord was made, and because of its rapid development it was supposed to be a gliosarcoma.

The autopsy showed a tumor of the cervical cord, which extended downward from the motor decussation, and involved the right side especially. The freedom of the small hand muscles from atrophy was contrary to the usual condition of tumors of the cord.

It is desirable to know exactly how much of the posterior columns was destroyed in this very interesting case, as vesical and rectal fibres and

those of tactile and muscular sense are supposed by some authors to be located here, and in this case these functions were not notably affected.

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A CLINICAL STUDY OF TRIONAL.—Galliard, in a paper read before the Academy of Medicine, Paris (*Medical and Surgical Reporter*, Oct. 19, 1895), states that he has employed this drug in forty cases of sleeplessness, in all but one of which it was administered by the mouth in single doses of fifteen grains.

A review of these cases shows that only seven patients proved refractory; in the others the effect persisted at least a few hours, or even the entire night.

According to this author, trional has neither antipyretic nor analgesic properties, is incapable of alleviating cough or acting upon night sweats, but is to be regarded as a simple hypnotic, especially indicated in ordinary insomnia associated with neurasthenia. In the majority of cases in which it was prescribed it proved of service, and it was found physiologically compatible with other remedies administered at the same time, and not liable to cause serious complications. In the majority of cases no after-effects were noticed, the awakening being agreeable. In a few instances there was a feeling of emptiness in the head, vertigo, and slight nausea. The drug was not found to influence the circulation even in cardiac cases. The respiratory and digestive tracts were not affected.

According to Morro, trional is completely decomposed in the organism, and therefore does not appear in the urine in the same manner as sulphonal. Schaumann says that trional has no influence upon the metabolism of the tissues and, unlike chloral, does not destroy albuminous substances.

The author's conclusion is that trional in doses of fifteen grains is innocuous and serviceable in insomnia due to various causes. As it is but slightly soluble in warm water, it is best given in wafers, the administration being followed by a cupful of warm fluid in order to accelerate its hypnotic effect.

As to whether trional is to be preferred to sulphonal, the author states that the hypnotic effect of the latter is often slow, while trional has the advantage in the majority of cases of producing sleep at the end of twenty to twenty-five minutes, and sometimes in even a shorter time.

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NITRO-GLYCERIN IN THE TREATMENT OF SCIATICA.—Dr. William C. Krauss of Buffalo, N.Y., read a paper on this subject before the Medical Society of the State of New York, recently held at Albany.

Although sceptical in regard to new measures and remedies, in the face of the abundance of measures recommended, such as electricity, heat, cold, acupuncture, nerve stretching, hypodermic injections, splint, extension, rest, cauterization, not to speak of the innumerable medicinal agents, he, however, tried Nitro-Glycerin and reported seven cases, all of which were speedily cured or greatly benefited.

The administration of Nitro-Glycerin should be as quickly as possible after the onset of the pain, whether it be neuritic or neuralgic in character; beginning with one minim of the one per cent. alcoholic solution

and increasing until the peculiar physiological effects of the drug are obtained. Seven cases were reported and are here briefly summarized :

CASE I. Male ; age 50-60 ; has been a frequent sufferer of rheumatism and sciatica for years. On Thanksgiving day, 1895, he was taken with an acute attack of sciatica. Various measures were tried without any effect and the case was turned over to the writer. Nitro-Glycerin in 1 minim doses of the one per cent. solution, three times daily, was prescribed, and in three days the severe pain had disappeared, and after ten days the patient was freed from all sciatic pain.

CASES II and III were that of a husband and wife, both suffering with acute sciatica. The husband, however, had been a rheumatic for some years and had also had gout. In two weeks time under the Nitro-Glycerin treatment both were relieved of the sciatica.

CASE IV, that of a stenographer, used to sitting ten hours daily on a hard-bottom chair, began to complain of symptoms denoting a neuritic affection of both sciatic nerves. Nitro-Glycerin and rest thoroughly dispelled these symptoms and in a short time she was again able to resume her customary work.

CASES V, VI, and VII were hospital cases, and received marked benefit from this form of treatment.

The disagreeable effects of the Nitro-Glycerin, as congestive headaches, flushing, etc., may be relieved by the bromides.

The author does not claim that it will cure every case of sciatica, but if it relieves fifty per cent., it will be doing what no other single drug has heretofore done.—*Alienist and Neurologist*.

**MULTIPLE NEURITIS AND LANDRY'S PARALYSIS.**—Dr. George L. Walton, in an article on Multiple Neuritis the Essential Element in Landry's Paralysis (*Boston Medical and Surgical Journal*), attempts to demonstrate with the aid of the statistics of 121 recorded cases and the report of a case from his own practice, the practical clinical identity of Landry's paralysis with a well-recognized form of toxic neuritis, as advocated by James Ross in 1889, and believes Landry's Paralysis should be classified under Neuritis, rather than under diseases of the cord.

Dr. Walton describes Landry's paralysis as an acute toxic disease, characterized by rapid loss of power in the lower extremities, trunk, and to a less degree in the upper extremities, affecting also the vagus and phrenic, sometimes other cranial, nerves. The affected muscles are lax. Pain, paresthesia, anesthesia, and tenderness are generally present in varying degrees, though in some cases sensory disturbances are wanting. Death follows in more than half (64 per cent.) of the cases. Recovery when present is very slow. The reflexes, deep and superficial, are lost at an early stage; wasting and reaction of degeneration appear if the patient survives. The process is a toxic affection of the peripheral nerves (neuritis), cord and brain, the former being the essential and persistent lesion. These introductory observations, he says, will enable us to appreciate, on the one hand, how closely his case conforms in its essential characteristics to the type of so-called Landry's Paralysis, and on the other, how appropriately it falls under the head of the now well-recognized toxic multiple neuritis.

THE PHENOMENA OF FATIGUE.—Foster, the physiologist, and Masse, of Turin, who have been experimenting upon animals for the purpose of determining the factor that produces the sense of fatigue, have concluded that the condition is attributable to poisoning of the cerebrum by products of retrograde metamorphosis; that the blood of a tired animal is poisoned, and when injected into another animal the normal buoyancy of the recipient is supplanted by the phenomena of fatigue. These experimenters declare that the toxicity of the blood may become so pronounced as to terminate fatally, and confirm the statement by citing instances of rabbits having been pursued until overtaken by death.—*Phys. and Surg.*

MALARIAL NEURASTHENIA.—Dr. Triantaphyllides of Batoum, says (*Med. Week*) malarial neurasthenia is observed in patients presenting no sign of chronic malaria, such as enlargement of the spleen or liver, anæmia, fever, etc. It is important to know that such a condition may exist, as it differs from ordinary neurasthenia in that it readily yields to suitable treatment, in which quinine plays the most prominent part. During the past five years he has seen about fifty cases of this affection, the malarial origin of which was proved by the presence in the blood of the characteristic hæmatozoa, and by the beneficial effect of quinine. The slightest form of neurasthenia due to malaria consists in a state of apathy or physical discomfort. In a higher degree of development, malarial neurasthenia presents almost all the psychical, amyosthenic, vasomotor and other disturbances of ordinary neurasthenia. Disturbed sleep, digestive troubles and general headache are less constant in malarial neurasthenia than in Beard's disease. The area of spinal hyperæsthesia is also less marked and not always present. The umbilical area is rarely absent, so that, in the majority of patients suffering from malarial neurasthenia, a sharp pain may be determined by compressing the umbilical region on the left side. Malarial neurasthenia rarely sets in suddenly, usually being preceded by vague neuropathic disturbances, and developing by paroxysms. After a number of these paroxysms have occurred, the neurasthenic condition becomes permanent. Prompt recovery is usually obtained in cases of recent date by means of from one to four hypodermic injections of neutral hydrochloride of quinine, the dose of each injection being from 60 centigrams (9 grains) to 1 gram (15 grains). In cases of relapse a larger number of quinine injections are required. In cases of old standing, usually more or less rebellious to preparations of quinine, Dr. Triantaphyllides has obtained good results from the administration of sulphite of cinchonine either by the mouth or subcutaneously, or sulphate of cinchonidine, assisted by certain accessory measures, such as wetpacking, suspension, and sea-bathing.

FOR IRRITABLE BLADDER DUE TO EXCESSIVE PHOSPHATURIA.—*Méd. Mod.*—

Acid, benzoic.....	}	āā ʒ ii
Sodii biborat.....		
Aquæ.....		ʒ vii

S.—One or two teaspoonfuls at a dose.



## PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF

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### A CASE OF ACUTE HÆMORRHAGIC SEPTICÆMIA TREATED BY ANTISTREPTOCOCCUS SERUM.

BY

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(With Note on the Mode of Preparing the Serum, by T. J. BOKENHAM, M.R.C.S.,  
L.R.C.P., late Research Scholar, British Medical Association.)

It appears desirable to publish at once the following case in the interest of those who make *post-mortem* examinations or are otherwise exposed to septic infection.

#### HISTORY OF THE CASE.

Dr. G. M., aged 30, pricked his thumb in making a *post-mortem* examination on a case of suppurative peritonitis at 1.45 p.m. on Monday, June 8th. At 7 p.m. the thumb began to throb, and during the evening this throbbing increased to burning pain, and between 9 and 10 the red lines of lymph duct inflammation had extended as far as the axilla, and the glands in this region were enlarged. At 4 a.m. on June 9th pain and tension of the pad of the thumb were so great that nitrous oxide gas was given and an incision made. Previous to this, vomiting had occurred, and there had been several shivering fits. The temperature at 7.30 a.m. was 103° F.

At 9.30 a.m. he was seen by one of us. The whole body was covered with a scarlet septic erythema ; the face was puffy and the eyes suffused. The patient complained of severe shooting pains up the arm, and in the intervals of pain was listless and drowsy ; the temperature was high and the pulse rapid and soft. It was arranged at once to take him as soon as possible to St. Thomas's Hospital, where he was admitted about 3 p.m.

The condition gradually got worse, and on the evening of the following day (June 10th) the temperature was 104.7°, and the pulse 150, soft, feeble, irregular at times, and running. The rash was very brilliant, and hæmorrhagic in places. All day drowsiness had been a marked feature, and the respiration was more rapid than normal, and occasionally jerky. Nourishment was taken with difficulty. There was soreness of the throat, which was of a brilliant red color. During the day vomiting occurred several times, and also slight bleeding from the nose. Coughing,



On June 12th the skin was moist, and the tongue was steadily cleaning from the edge, leaving a marked pink moist surface, such as is seen on the throat in diphtheria when the membrane clears under the use of antitoxin. Chloroform was given by Mr. Tyrrell, and an incision into the thenar eminence, opening the sheath of the tendon, was made; also one over the first phalanx of the thumb. The parts, though swollen and tense, contained no visible pus. At midday the dose of antitoxin was doubled, 7 c.cm. being injected every four hours.

The chart will show from this date the gradual convalescence of the patient. No further incisions were necessary, the swelling and œdema above the wrist gradually disappeared, and the incisions all began to heal without any visible discharge of pus. The rash did not disappear entirely until June 16th.

#### REMARKS.

The use of the antitoxic serum appears to us to have produced the following effects:

1. The mind became clear, notwithstanding the high fever.
2. The frontal headache ceased.
3. The tongue began to clean and become moist from the edge until it was clean, moist, and of a peculiar pink color all over.
4. The pulse became slower and of better quality.
5. The respiration was slower and never jerky afterwards.
6. The skin, which was dry and burning, became moist, and sweating occurred.
7. The wounds healed without suppuration, and the threatened inflammation of the great synovial sac under the anterior annular ligament subsided.

Every care was taken to aseptically use the syringe used for the injection, to cleanse the skin at the site of injection, and to maintain the sterility of the serum by keeping it in ice, and using other obvious precautions. The injections were given into the loin and abdominal wall. Notwithstanding the large number of injections (28 in all, 8 of 3½ c.cm., and 20 of 7 c.cm.), no local reaction has occurred at all except a fleeting urticaria limited to the site of injection, which was noticed once or twice, and did not produce any inconvenience.

The recovery of this case would seem to encourage the employment of antistreptococcus serum in many other serious surgical conditions. Amongst many others the following occur to us: fracture of the skull with risk of suppurative meningitis, acute necrosis, acute septicæmia or pyæmia from any cause, rapidly spreading gangrene or cellulitis, erysipelas, general suppurative peritonitis, and septic complications of middle ear disease.

With regard to dose, we should be inclined to commence by injecting a large one—say 20 c. cm.—and then to give a smaller dose—say 7 c. cm. every four hours. After most of the injections given in the above case, the temperature temporarily dropped, but soon rose again, and we fancy that it is of great importance to give the injections frequently.

We append a note by Mr. Bokenham, who supervised the preparation of the serum, as to the animal from which it was obtained, the method

employed to immunise the animal, and the tests carried out to estimate the antitoxic value of the serum from the immunised animal.

ADDITIONAL NOTE ON THE PREPARATION OF ANTISTREPTOCOCCUS SERUM  
BY T. J. BOKENHAM, M.R.C.S., L.R.C.P.

Practitioners in this country have as yet had but little experience as to the effects of serotherapy on pyogenic affections. Reports have certainly appeared in the medical journals of isolated cases treated in this manner, but the supply of serum has been altogether too scanty to allow of anything like an extended trial of its merits. The whole matter is, therefore, still more or less in the experimental stage.

On the Continent, thanks to the energetic labors of Marmorek and of Henri Roger, both of Paris, it has been possible during the past twelve months or so to observe the influence of "antistreptococcus serum," on a considerable number of affections and symptoms directly or indirectly due to the presence of streptococci. Reference to several publications bearing on the subject will be found at the end of the present note. It may be stated generally that these nearly all tend to show that, given a carefully prepared and tested serum such as that issued from the Institut Pasteur, the serotherapy of pyogenic affections may be expected to yield results superior to those obtainable by any other mode of treatment.

The very remarkable case above reported cannot fail to attract the attention of others to this mode of treatment, so that although it had been originally my intention to refrain from making even a preliminary statement on the subject of streptococcus serotherapy until a larger amount of evidence was forthcoming as to its value, I feel that further delay is no longer justified.

I have therefore endeavored to set forth in the following notes a brief account of the nature, mode of preparation, and the means employed for estimating the activity, of the "antistreptococcus serum" prepared by myself, and supplied to the profession through the firm of Burroughs, Wellcome & Co.

1. Antistreptococcus serum obtained from the blood of an ass which has received during several months repeated and increasing injections of living virulent streptococci.

2. It will be seen at once, therefore, that the principle involved differs in important respects from that involved in the preparation of antidiphtheria serum. In this last it is the toxins, formed by diphtheria bacilli in bouillon cultures, which are employed to set up immunity in animals furnishing the serum. Antistreptococcus serum resembles rather the diphtheria "antimycetine" as prepared by Klein than the antitoxin ordinarily obtainable, and may be expected to possess antimycotic rather than antitoxic properties.

3. The ordinary streptococcus of the laboratory is practically useless for the production of an active serum. Cultures obtained from various sources—among others from my friends Drs. Marmorek and Roger—failed altogether to give any satisfactory results until their virulence had been reinforced by successive passages through susceptible animals, or by other means which need not be here described.

4. Each injection of streptococci was always followed by considerable

local and general reaction, characterized principally by local swelling and rise of body temperature. Such disturbances usually continued during several days, but ultimately a complete recovery took place.

5. Tests applied to the serum obtainable after each injection showed a steady increase of its antimycotic powers. Such tests are carried out as follows: The lethal dose of a standard streptococcus culture having been ascertained, similar quantities of culture are mixed *in vitro* with various proportions (a) of normal ass serum, (b) of the serum to be tested. On injecting these mixtures into animals of nearly equal weights it is readily demonstrable that while the control mixtures are almost uniformly fatal, those containing the prepared serum in proper proportion are practically innocuous. A maximum of one-hundredth of a cubic centimetre of serum should neutralise and otherwise lethal dose of streptococci.

6. It has been demonstrated that streptococci may remain in the blood of an animal for several days after their introduction. To ensure their absence from serum intended for clinical use, it is therefore imperative to remove all chance microbes by filtration through porcelain. In actual practice Chamberland filters are used, and the serum is made to pass through them by pressure furnished by liquid carbonic acid gas. The actual pressure required need seldom exceed one of about 70 lbs. to the square inch, such a pressure being conveniently secured by using one of Uhlmann and Keutgen's regulating valves in connection with the cylinders of compressed gas.—*Brit. Med. Journal*.

ACUTE GANGRENOUS PANCREATITIS. V. BONSDORF AND SIEVERS describe two cases of acute gangrenous pancreatitis of which the cause was unknown. The symptoms were in many respects similar to those of acute intestinal obstruction. In both were found areas of fat necrosis, in the glands in the mesentery, appendices epiploicæ, kidney capsule, and other places. Their size varied from that of a linseed to that of a pear, and they consisted of a yellowish-white detritus. Beside the fat necrosis there was ascites, the fluid being of a brownish colour from admixture of altered blood.—*British Medical Journal*.

THE ALKALINITY OF THE BLOOD IN RELATION TO IMMUNITY. CALABRESE (*Il Policlin.*, February 15th, 1896), as the result of an extensive investigation of this subject, comes to the following conclusions: The alkalinity of the blood goes on increasing *pari passu* with the acquisition of immunity or refractoriness towards disease, however produced. The immunised organism responds to deleterious agents with augmented alkalinity, moderate in degree and lasting some time, and never giving place to a diminished alkalinity with respect to the normal, as happens in the healthy organism. Rabbits immunised against anthrax, diphtheria, etc., do not resist poisons different from those against which they have been vaccinated, but present nevertheless a notable delay in death as compared with control animals. Finally, the author asserts that the alkalinity of the blood is the most powerful and most constant of the means of defence which the immunised organism puts into play to defend itself against hurtful agents and to annul the evil effects of the same.—*British Medical Journal*.

## NOSE AND THROAT.

IN CHARGE OF

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## A NEW SEMIFLUID PRODUCT, OLEO-STEARATE OF ZINC.

BY WALTER F. CHAPPELL, M.D.,

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Medicinal remedies for intranasal, pharyngeal, and laryngeal use should be more or less fluid, non-irritating, protective, tenacious and easy of application. Owing to the necessarily fluid character of spray and douche solutions, these conditions are not fulfilled by them; neither do these solutions remain in contact with mucous surfaces long enough to produce their fullest remedial benefits.

The semifluid oily preparation described by me in the *Annals of Ophthalmology and Otology* for April, 1895, met many of the objections to sprays, but the lard and petroleum products of the base did not prove entirely satisfactory. The taste was unpleasant, and they did not retain the same density at all temperatures.

Mr. W. J. Evans, of the house of McKesson & Robbins, has carried out certain suggestions of mine in the formation of a new compound—oleo-stearate of zinc—which is chemically and pharmaceutically perfect, and is a valuable advance in the pharmacy of semi-fluid preparations. This stearic compound is prepared by combining a form of stearate of zinc with benzoinated liquid albolene, to make an opaque, semifluid, white creamlike product, having a specific gravity at 60° F. of 0.832. It does not precipitate at the temperature of 212° F. and remains fluid at 14° F. and lower. It is neutral to litmus paper, almost tasteless, and entirely non-irritating to any mucous membrane.

My experience with this preparation has been chiefly in the treatment of diseases affecting the linings of the upper respiratory passages, but it may be used as an affective application to the skin or to any mucous surface. In my experience the oleo-stearate of zinc is specially valuable for intranasal applications in cases of diphtheria and scarlet fever, and in all diseases of the upper air tract occurring in young children. When applied in the nose with a camel's-hair brush, it clings for hours to the glandular openings or to any abrasions or spots of ulceration on the mucous membrane. It is readily diffused over the membrane of the nasopharynx, pharynx, and larynx; it may also be applied to the latter with a medicine dropper.

The oleo-stearate of zinc may, of course, be employed alone or in such combinations as the nature of the case indicates. The following combi-

nations have, in the writer's experience, been most valuable: *Oleo-stearate of zinc with balsam of Peru*, in conditions requiring stimulation and healing. *With liquor plumbi subacetatis*, in acute rhinitis, or the coryza accompanying a common cold. *With boric and carbolic acids*, in copious watery nasal discharges and hyperæmic conditions. *With iodine*, in dry and atrophic rhinitis and ozæna. *With tannic acid*, in nosebleed, and catarrhal conditions characterized by yellow discharges. *With camphor and menthol*, it is cooling, and therefore available in hay fever and coryza. *With acetanilide*, it is applied after operations as an antiseptic and protective. *With antipyrine*, as a hæmostatic in recurring epistaxis, and as a sedative in irritable conditions of the mucous membrane. *With oleum pini pumilionis and eucalyptol*, it is soothing and curative as an intratracheal injection, in chronic bronchitis and asthmatic affections. *With oleum pini pumilionis*, as a sedative in irritable conditions of the nasal mucous membrane characterized by excessive sneezing. *With orthochlorophenol*, it is valuable in syphilitic ulcerations and ozæna.—*New York Medical Journal*.

#### THE IRRITANT ACTION OF SALICYLIC ACID ON THE AIR-PASSAGES.

Irritation of the nasal, pharyngeal, and bronchial mucous membrane as the result of the inhalation of air laden with particles of salicylic acid or of an atomized solution has been mentioned by a number of writers, but Dr. Ludwig Ebstein, who has an article on the subject in the *Wiener klinische Wochenschrift* for March 12th, remarks that he has found reported only one instance of a definitely observed case in which the phenomena were described, namely, a case of hæmorrhagic pharyngitis and dysphagia recorded by Wolfberg. He himself has had the opportunity of observing a case, and he embodies a report of it in his article.

The patient was a man, sixty years old, a maker of preserves. For two years he had suffered with a tormenting cough, by day as well as by night, accompanied by difficult expectoration of a very thick, gray mucus. In April, 1895, his condition became so aggravated that there was often dyspnoea in the daytime, the cough increased in intensity, and every night he was suddenly awakened with a feeling of suffocation, so that he had to resort to the inhalation of steam, whereby he was enabled to cough up with difficulty a scanty, thick secretion, and the dyspnoea was rendered more tolerable. Up to the middle of September, when Dr. Ebstein first saw the man, the symptoms mentioned kept on increasing, together with a sense of dryness. The whole nasal mucous membrane was then of a dusky-red color, with a very scanty secretion, and the nasopharynx showed the same appearances. The pillars of the fauces appeared as inflamed swellings which were thrown into horizontal folds when swallowing movements were executed. The upper part of the larynx showed nothing abnormal beyond moderate inflammatory redness and swelling, but the vocal cords showed a striking change in the neighborhood of the vocal processes—on the upper surface of each cord, pro-

jecting beyond its border, there was an œdematous, tumor-like swelling, and the two cords "smacked" perceptibly on phonation. The trachea, which was readily visible to a considerable depth, showed a uniform swelling of the mucous membrane, which was of a deep-red hue and covered here and there with thick, gray secretion. The swelling was so great as to produce a notable stenosis, reducing the calibre to the size of one's little finger. There was manifest stridor with each inspiratory and expiratory movement, and both these movements were prolonged. There were dry, piping murmurs in all parts of the chest. The diagnosis arrived at was that of bronchitis sicca with slight emphysema.

The swelling of the tracheal mucous membrane was somewhat reduced by five days' inhalations of a spray of a weak solution of sulphate of zinc, but expectorants had not the slightest effect on the thick bronchial secretion. Inhalations of atomized solutions of sodium bicarbonate, sodium chloride, etc., served—so the patient said—only to increase the sensation of dryness. Finally, iodide of potassium was prescribed, as recommended by Cantani, and proved to be most efficacious; the secretion became thinner and the swelling of the tracheal mucous membrane grew manifestly less pronounced. In short, at the end of four weeks the man was entirely free from his troubles. But in five days after his returning to his work he had a relapse, and then for the first time it came out that he was in the habit of handling salicylic acid in his occupation. A resumption of the treatment accomplished a cure again in the course of three weeks. Then the man gave up the use of salicylic acid, and he had no further return of the trouble. Although he had employed the acid for years, it is noteworthy, says Dr. Ebstein, that the pronounced aggravation of his symptoms had followed close upon his giving up the use of the crystalline acid and using the amorphous form instead.—*Ed. New York Medical Journal.*

#### SOME RESULTS OF INFLUENZA: THEIR METHOD OF TREATMENT.

There are few diseases which present such a variety of after-effects as epidemic influenza. Some of the sequelæ are more common than others, and consequently the general line of treatment with regard to these is pretty clearly defined, while others are comparatively rare, and afford but scant opportunity for forming correct conclusions as to how they may be best dealt with.

Some short time back I had what appeared to be an ordinary attack of influenza, inasmuch as the nasal discharge almost entirely subsided in the course of two days. But I soon began to experience a constant feeling of faintness, and *both nostrils appeared to be unusually blocked on lying down at night.* After a few doses of liquor strychniæ the faintness disappeared, but the blocking of the frontal sinuses became worse and worse, till at last it was utterly *impossible to get sleep except in the upright position (i. e., in an armchair),* and then for a very short time. *On going into a hot room, the difficulty of breathing through the nose in-*



creased, the cheeks became red and flushed, and at night the feet, and often the face, became burning hot, though there was little or no rise of temperature. All the time the nose remained perfectly dry, and it was impossible to get any passage through it on blowing with a pocket handkerchief. Steaming only seemed to have the effect of making it, if anything, worse. The distress produced was really terrible, and the loss of sleep brought about such a feeling of exhaustion that at one time it appeared as if I should lose my reason. Nothing in the shape of medicine seemed to do any good, but boiling-hot *Bovril* certainly gave me some relief in about twenty minutes after it was taken. On dry frosty days I fancied there was some improvement. After being bad for about five or six weeks I went to see one of the chief London specialists, who confirmed my view of the case, viz., its being a vaso-motor paralysis, and told me that little could be done in the way of treatment—that in all probability it would go on for two or three weeks longer, and that if improvement did not take place as expected, a change to the seaside would be necessary. The local application of cocaine which I had been trying he said was of very little use, inasmuch as contraction of the blood-vessels first brought about after a time gave place to dilatation. A pill of strychnine and arsenic (gr. 1-24th of each) three times a day he thought might do some good; but I fancied the pil. phosphori co. was of more service. Two days after my visit to London I was very much worse, and I then went to one of my local medical brethren and told him how really weak and ill I felt. He said he had a prescription for a snuff which had been extracted from the *Lyons Medical Gazette*, and although he did not know its effect, advised me to try it. It consisted of 1 grain of cocaine, 2 grains of menthol, and 100 grains of boric acid. Within a few minutes of taking the first pinch I obtained a marvellous relief for about an hour, and by its continued use I got more and more ease till at last the necessity for it almost entirely disappeared.

When speaking to another medical man about my own case a short time after, he told me he had suffered for a year or two past with nasopharyngeal catarrh and throat deafness following upon influenza; that he had consulted an eminent London throat specialist who had recommended various inhalations and throat sprays, but without much benefit resulting. I then suggested he should try the same kind of snuff that had proved of such service to me, and the result he subsequently told me was beyond his expectations. In about a week or two he was almost entirely free from his throat trouble, and could hear perfectly well. Of course, as he said, he had to use it occasionally, but it always gave him relief.

I cannot help thinking it might prove useful in some cases of ozæna, post-nasal diphtheria, relaxation of the posterior palatine arches, and hay fever. At any rate, it demands a trial.—*Medical Press*.

## PAEDIATRICS.

IN CHARGE OF

J. T. FOTHERINGHAM, B.A., M.B., C.M.,

Physician to Out-door Department Toronto General Hospital ; Physician to Out-door Department Hospital for Sick Children.

There is no special department of practice in which there is less room for the specialist in practice than in this one of Diseases of Children. The work, while special in character, is done by the general practitioner, who in virtue of his presidency at the birth usually attends the child till adult life removes him possibly from his care. And still it is peculiarly in this department that advance depends upon the pure specialist. For instance, the work done in placing Infant Feeding on a scientific and rational basis has been done entirely by a score or two of men whose names are barely known to the hundreds of general practitioners, and of course utterly unheard of by the thousands of patients who are reaping the fruits of their labor in laboratory and infirmary. It will be the aim of this Department of THE LANCET to place the general practitioner and the special investigator as far as possible *en rapport* as space will allow. One is tempted to express surprise that so little attention is paid to Pædiatrics in the schools. But it has been so far impossible to add to the work laid upon the groaning under graduates. We can safely say though that with the advent of the eight months' session there should and will come definite instruction in this department.

WHAT IS THE VALUE OF OPERATIVE INTERFERENCE IN THE TREATMENT OF EPILEPSY?—Based on an analysis of seventy cases taken from contemporaneous literature.—E. G. Mason says (*Med. News*, 1896, March 21) that in these matters the skill and judgment of the physician will, of course, be the most powerful factors, but there are certain broad principles which should always be borne in mind :

- (1) Always consider an epileptic fit as a symptom of some underlying condition.
- (2) Inquire particularly and very carefully about the first convulsion: What was its apparent exciting cause; what was its character, general or affecting only certain portions of the body, and what portion of the body was affected at the beginning of the fit?
- (3) If there was an aura investigate it carefully, as it will not infrequently give a clue as to the seat of the lesion.
- (4) If there has been a trauma or a suspicion of trauma, shave the head and look carefully for a scar or a depression. If there is evidence of a trauma in a position corresponding to the initial symptoms of the fit an operation is usually justifiable.
- (5) If you cannot get a clear history of the case give a placebo and place the patient under competent surveillance until you can satisfy yourself as to

the character of the fits. (6) Do not operate on a porencephalic child and expect to cure the epilepsy. Do not, as a rule, operate on a case of post-hemiplegic epilepsy in a child and expect to cure. (7) Do not operate on an old, idiotic epileptic, a victim of idiopathic epilepsy, with general convulsions of years' standing.

What, then, is the value of operative interference in the treatment of epilepsy? In the light of our present experience it will be fair to put it thus:

- a. A certain small percentage of the cases will be cured.
- b. A certain larger percentage will be improved.
- c. An even larger percentage still will not be improved at all.
- d. An operation upon almost any case will produce a temporary cessation of fits.—*Pædiatrics*.

TYPHOID FEVER IN CHILDREN.—Dr. W. B. Northrup read a very interesting paper on this subject before the Section on Pædiatrics, New York Academy of Medicine, November 14th, 1895. He points out that unless there be an epidemic and unless in each case the characteristic symptoms exist, temperature curve, rash, and enlarged spleen being the most important, the diagnosis of typhoid must be made with the utmost caution. He concludes his article as follows, and we may add amen to it:—"We desire to encourage a healthy scepticism as to typhoid in an infant, especially in the absence of an epidemic, which case has not the classic symptoms and signs which would lead to a diagnosis in an adult. We would say further: Beware of typhoid without lesions and lesions without clinical history of typhoid."

NOYES, W. B.: ENTERIC FEVER IN INFANCY. (*Journal of American Medical Association*, 1895, Vol. xxv., No. 13.)—After the enumeration of eight English epidemics of typhoid fever, eight Continental epidemics and six epidemics in America, the author concludes that it is proved that during epidemics typhoid fever is not uncommon in childhood, and that in the first five years of life it occurs in regular proportion of cases quite as frequently as one would expect from the special care which infants receive. We have been free to a certain extent from these epidemic cases in America. After a review of the pathology of typhoid, the symptoms are considered in detail. As the author covers the period of childhood, it is doubtful to what extent his remarks apply to the disease as it appears under two years. He concludes that the disease seems to appear in three forms: an abortive type of short duration, a type resembling ordinary typhoid fever but lasting about three weeks, and a malignant or prolonged type. The convalescence in children is, as a rule, quicker and less complicated than in adults.

REPORT ON DIPHTHERIA ANTITOXIN.—The Metropolitan Asylums Board of London has just issued a report of the results following the use of antitoxin in the treatment of diphtheria at the hospitals under the authority of the board. The results were obtained during the year

1895 in six hospitals in which cases of diphtheria were treated. The total number of cases treated with antitoxin was 2,182, in 615 of which the patients died, representing a mortality of 28.1 per cent. The drug was not used in all the cases which came under treatment, but, generally speaking, only in the severer instances. The death rate from diphtheria in 1894 was 29.6, while in 1895 it was 22.5, a reduction of 7.1 per cent. In the laryngeal cases during 1894 the mortality was 62.0, while in 1895 it was reduced to 41.8. In the tracheotomy cases it was 70.4 during 1894, but in 1895 the death rate fell to 49.3. Thus, the improvement in the mortality rate was as much as 20.2 per cent. in the laryngeal cases and 21.2 per cent. in the tracheotomy cases. The clinical results of treatment by antitoxin, noted in the report, were: Diminution of faucial swelling and of the consequent distress; lessening or entire cessation of the irritating and offensive discharge from the nose; limitation of the extension of membrane; earlier separation of the exudation; limitation and earlier separation of membrane in laryngeal cases; improvement in general condition and aspect of patients; prolongation of life, in cases which terminate fatally, to an extent not obtained with former methods of treatment. The report concludes with the following summary of the improved results in the diphtheria cases treated during the year 1895: A great reduction in the mortality of cases brought under treatment on the first and second day of illness; the lowering of the combined general mortality to a point below that of any former year; the still more remarkable reduction in the mortality of the laryngeal cases; the uniform improvement in the results of tracheotomy at each separate hospital; the beneficial effect produced on the clinical course of the disease.—*Pædiatrics*.

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DIPHtheria ANTIToxIN IN JAPAN.—There were 353 cases of diphtheria treated by serum injections in Tokio during the year ending November 25, 1895. Of this number 31, or 8.78 per cent., died. In the statistics collected by Kitasato of 26,521 cases of diphtheria in Japan, treated before the introduction of serotherapy, the number of deaths was 14,996, a mortality of 56.54 per cent.—*Med. Rec.*, 1896, xlix. 401

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The use of antitoxin in the treatment of diphtheria has not become so general in this country as our personal experience with it would amply justify. The conservatism which is so creditable to the profession and so necessary an admixture in the physician's mental make-up, especially in these days when the manufacturer of new remedies is so relentless in his pursuit of us, would be a mistake in our opinion, in this particular instance.

A recent accident in Germany, in which the son of Dr. Langerhans, of Berlin, *aet* 21 months, "died suddenly while in perfect health in consequence of an injection of diphtheria antitoxin," has been widely discussed in the lay press.

DR. C. B. FITZGERALD, in *Med. Rec.*, 1896, xlix, 572, has practically proved, on information secured from Dr. Langerhans himself, that the

child was poisoned by the carbolic acid used as preservative of the anti-toxin employed, as "he had received about four-fifths of a grain, about five times the safe dose, and inasmuch as the minimum fatal dose is unknown, perhaps a fatal dose."

The only unpleasant result we have seen is that in every other case, about a week after administration, an annoying urticaria appears. The article we have used so far is Gibier's, of New York, obtained from the Provincial Board of Health. While judgment should be shown in selection of cases for its employment, and those that promise to be slight may be safely treated without it, still we would not personally feel justified in neglecting it in any case at all severe, bearing in mind that no other measure found valuable before can be neglected now; that it must be used within the first forty-eight hours if at all, and that it must be used freely, two drachms for any patient above eight or ten years, and another drachm in twelve hours or so after.

A CASE OF INTRA-UTERINE INFECTION WITH RELAPSING FEVER.—A. Mamuroffski (*Meditinskoye Obozrenie, No 20. 1895*) relates the case of a woman, four months pregnant, who aborted during an attack of relapsing fever. In dry preparations made from the blood of the vena cava and right ventricle of the foetus, Obermeier's spirochætæ were found in great numbers. The author believes from this that micro-organisms may readily find their way from the capillaries of the uterine mucous membrane into the placental circulation.

This is an extremely interesting observation, both as bearing on antenatal disease and its possible effect on the whole future of the coming child, and as a contribution to the pathology of such inherited diseases as syphilis.—[ED.]

EPILEPSY.—The following formula was recommended by Brown-Séquard as a remedy for epilepsy :

Sodium bromide.....	gr. 180
Potassium bromide.....	gr. 180
Ammonium bromide.....	gr. 180
Potassium iodide.....	gr. 90
Ammonium iodide.....	gr. 90
Ammonium carbonate.....	gr. 60
Tincture of calumba.....	$\frac{3}{8}$ 1½
Water, sufficient to make.....	$\frac{3}{8}$ 8

Mix. Adult dose, 1½ teaspoonful before each meal, and 3 teaspoonfuls at bedtime.—*Practitioner*, 1896, *lvi*, 448.—*Paediatrics*

Itching, which is so often found in connection with eczematous conditions of the anal and genital regions, can be greatly relieved, according to Dr. Cantrell, by the use of an ichthyol wash ranging in strength from 1 to 2 drams to the ounce of water.—*Phila. Polyclinic*, 1896, *v*, 136.—*Paediatrics*.

## RINGWORM LOTION.—

Aromatic sulphuric acid,  
Spirit nitrous ether,  
Creosote, of each equal parts.

M. Apply once a day with a feather until well.

—*Bull. Pharm.*, 1896, *x*, 134.

PEDICULI.—Oil of sassafras will destroy pediculi and their ova.—  
*Med. Rec.*

A CASE OF POISONING FROM THE EXTERNAL USE OF ACETANILID.—  
Richard C. Newton (*Med. Rec.*, 1896, *xlix*, 333) reports the case of a female, aged four years, who was poisoned by the external use of acetanilid on a granulating surface on the arm, following an extensive burn.

The main symptoms were a weak and rapid pulse, cyanosis, collapse, with the patient lying perfectly motionless and helpless on her back, eyes glazed and staring, with widely dilated pupils, and cold clammy extremities.—*Paediatrics*.

SUPERSTITIONS ABOUT BABIES.—The Manx people believe that it will dwarf or wizen a baby if any one steps over it or walks around it.

In some parts of England people bind up the infant's right hand that it may have riches when grown.

In Yorkshire, England, a new-born babe is placed in a maiden's arms before being touched by any one else, in order to insure good luck.

In South America, a book, a piece of money, and a bottle of liquor are placed before the infant the day it is one year old, to ascertain its bent in life.

A baby is considered lucky in Scotland if it handles its spoon with its left hand, and it will be perfectly happy and successful if it has a number of falls before its first birthday.

In the north of England, when a child is taken from a house for the first time, it is given an egg, some salt, and a small loaf of bread, and occasionally a piece of money to insure it against coming to want.

In Germany it is considered necessary that a child should "go up" before it goes down in the world, so it is carried upstairs as soon as born. In case there is no upstairs, the nurse mounts a table or chair with the infant.—*Annals Hygiene*, 1896, *xi*, 257.—*Paediatrics*.

A TEST FOR ALBUMIN IN THE URINE.—Alex. C. Ewing recommends the following simple way of applying an old test. It is this: Draw up into a small glass pipette or tube about an inch of the urine, let the finger remain tightly over the top and insert the pipette into nitric acid and draw up under the urine about the same quantity of acid, when if even a trace of true albumin be present there will appear a beautiful line of demarcation between the acid and urine. This test is as accurate as it is

simple, and, besides, is decidedly economical and far less trouble than all others.—*Med. Rec.*, 1896, *xlix*, 337.

REY.—(*Gazz-degli Osped.*, *Paediatrics*.) Recommends trephining through the rib in empyaema, instead of resection. He makes a longitudinal incision over the eighth or ninth rib, raises the periosteum, trephines through the rib with a trephine large enough to admit a fair-sized drainage tube, and claims that while the method allows adequate means of intrapleural antisepsis and drainage it has the advantage of preserving the integrity of the chest wall and thus favoring the re-establishment of respiration on the affected side. It would not appear to be of service in a case in which the lung is so permanently compressed as to be incapable of return to the chest wall.

HEADQUARTERS MICHIGAN MILITARY ACADEMY,  
ORCHARD LAKE, Mich., June 2, 1896.

MESSRS. F. STEARNS & CO., Detroit, Mich.:

GENTLEMEN,—I have the honor to report for your information some observations in regard to the effect of the Kola nut and the liquid preparation (Kola-Stearns) furnished by you for a forced march by a company of cadets from the Michigan Military Academy at Orchard Lake, Mich., to Detroit, Mich., on Saturday, May 23, 1896.

A company of forty-one cadets from the Academy left Orchard Lake at 4.52 a.m., and reached the Russell House, Detroit, at 12.05 p.m., being seven hours and thirteen minutes, marching the entire distance of twenty-eight miles, including rests and twenty-five minutes for lunch.

The actual marching time was six hours and twenty minutes, and the distance, as twice measured by a cyclometer, is 28.07 miles, or at the rate of 4.53 miles per hour while marching—a very remarkable record.

Before starting I gave to one-half of the company the Kola nut; to the other half the liquid preparation (Kola-Stearns.) I am convinced that the effect of the nut and your liquid preparation is to stimulate the muscles and permit of sustained exertion, while it allays thirst and hunger. The company felt comparatively well after the trip, with the exception of some stiffness and sore feet; but they soon recuperated, and no protracted effects of the long march were noticeable.

This was my first experience with the Kola, and while I could not observe its effects on individuals as closely as I desired, I am of the opinion that it will find favor with those undergoing great physical exertion.

Yours truly,  
FRED. A. SMITH,  
*Captain 12th Infantry,*  
*Commandant of Cadets.*

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By *Privy Councillor Professor* OSCAR LIEBREICH, M.D.

(*Regius Professor of Pharmacology, University of Berlin.*)

It has oftentimes been pointed out, and that, too, with reference to mineral waters, that the first condition of therapeutic efficacy is the constancy of the remedy employed. In the case of natural mineral waters this point is of the greatest importance. The aperient waters offer the one sole exception in regard to this constancy among our natural mineral springs. These are formed by impregnation of the natural basins which supply the mineral constituents. From this, as observation teaches us, there arises an extraordinary inconstancy of the chemical constituents. The aperient waters, therefore, form an exception to the mineral springs proper. For medical purposes it is absolutely necessary, in prescribing this water, to know the dose. It has happened not infrequently that a wineglassful of aperient water has been shown to contain the same amount of mineral constituents as the practitioner would, from the analysis, expect to be present in a tumblerful. It is obvious, therefore, that neither the practitioner nor the patient can form a correct opinion in this manner; and under these circumstances it may even happen that an unexpectedly great degree of concentration may do harm by useless irritation of the intestines. There is a further disadvantage arising from changes in mineral constituents, so that, instead of the sulphates which the water should contain, chlorides are present in an injurious amount. The opinion has very often been expressed that the bottling of such waters should be under scientific control, so that their proper constitution should be ensured exactly in the same way as that of other medicines is regulated by the *Pharmacopœia*. It is, therefore, a matter for high satisfaction that the aperient water, “Apenta,” from the Uj Hunyadi springs in Ofen, has been placed under State control. The Royal Hungarian Chemical State Institute (Ministry of Agriculture) has undertaken this charge, and, therefore, it is now possible to obtain a water which is free from injurious extraneous waters infected with organic substances. The analysis has been published by Professor Leibermann, Director of the said Institute. The proportion of sulphate of soda to sulphate of magnesia is 15.432 to 24.4968 in the litre, so that this water is to be classed with the best aperient waters, and may be pronounced one of the strongest. Owing to the constancy of the Apenta water ensured by the State guarantee, that confidence in aperient waters which had been lost will be revived through this important therapeutic agent. The constancy of the Apenta water makes the use of it indicated not only as an occasional purgative, but in systematic courses of treatment. It is particularly recommended for the regulation of tissue change in the most diverse diseases, in obesity, chronic constipation, portal obstruction, hæmorrhoids. Whether the lithia contained in this water is of any therapeutic importance is at present doubtful, but its presence is a distinctive feature in the analyses.

PROFESSOR OSCAR LIEBREICH, M.D.,

“*Therapeutische Monatshefte*,” Berlin, June, 1896.

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*THE APOLLINARIS CO., Ltd., London.*



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: RELIEVES :

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The Largest Circulation of any Medical Journal in the Dominion.

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## Editorial.

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### THE CANADIAN MEDICAL ASSOCIATION.

The Canadian Medical Association will meet in St. George's Sunday School Room, No. 15 Stanley Street, Montreal, on August 26th, 27th, and 28th next.

The local committee are putting forth every effort to make the meeting a success. There will be "clinics" at 12.30 each day at the various Hospitals, General, Hotel Dieu, and Royal Victoria. The "clinics" will be followed by the reading of papers in the theatre of the Hospitals, and in order that time may be saved, light lunches will be served.

On two afternoons, Wednesday and Thursday, there will be short excursions, and on Thursday, August 27th, at 7.45 p.m., the Association dinner will be held.

Special arrangements have been made with the Street Car Company, so that no time will be lost in going to the Hospitals from the place of meeting.

This promises to be the largest meet of the Association ever held.

The Inter-Provincial Registration Committee, about which so much interest centres, is booked to meet on August 26th, at 10 a.m.

The regular Sessions of the Association commence at 12.30 p.m.

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### PAPERS FOR THE CANADIAN MEDICAL ASSOCIATION.

President's address, Jas. Thorburn, Toronto; address in bacteriology, J. G. Adami, Montreal; address in medicine, Geo. Wilkins, Montreal; address in surgery, John Stewart, Halifax; addresses in midwifery, J. F. W. Ross, Toronto, J. D. Thorburn, Toronto; hemorrhagic pancreatitis, A. McPhedran, Toronto, Wm. Osler, Baltimore; 100 cases of retroversion of the uterus, treated by ventro-fixation and Alexander's operation, with results, A. Lepthorn Smith, Montreal; the influence of mitral lesions on pulmonary tuberculosis, J. E. Graham, Toronto; a note on amputation at the hip joint in tubercular disease, A. Primrose, Toronto; tetany follow-

ing scarlatina, J. B. McConnell, Montreal; the foot, its architecture and clothing, B. E. McKenzie, Toronto, H. S. Birkett, Montreal; ophthalmia neonatorum, R. Ferguson, London; observations on the relation between leuchæmia and pseudo-leuchæmia, C. F. Martin and G. H. Matthewson, Montreal; etiology and treatment of aone vulgaris, A. R. Robinson, New York; thyriodectomy, D. Marcil, St. Eustace, Que.; some observations on the heredity of carcinoma, T. T. S. Harrison, Selkirk: some applications of entomology in legal medicine, Wyatt Johnston and Geo. Villeneuve, Montreal; physiological demonstrations of interest to medical men, Wesley Mills, Montreal; the theory of the eliminative treatment of typhoid fever, W. B. Thistle, Toronto; oral surgery, C. Lenox Curtis, New York, H. N. Vineberg, New York; clergymen's sore throat (?), J. Price Brown, Toronto.

Fare and a third rates by rail and boat have been secured.

For further particulars see Provisional Programme, or address F. N. S. Starr, 471 College Street, Toronto.

### THE BICYCLE FOR WOMEN.

It may seem a work of supererogation to speak of the good or evil influence exerted upon women by riding the bicycle. For whether it works for good or evil, the sex has come out strong for the wheel; and the crusade would need to be strong, indeed, and preached by many tongues and eloquent, which would cause her to abandon what has been the greatest boon conferred upon her sex in modern times.

At the same time, not a few women are riding with—not what we could call a guilty conscience—but with a sort of half-dread that they are doing themselves injury “internally.” The bugbear of modern, civilized women is undoubtedly “internal trouble,” and let any thoughtful conscientious woman have it once whispered in her ear by some old woman, male, medical or otherwise, that the wheel is productive of such troubles, and she will ride with a certain consciousness of wrong-doing, such as we can remember feeling when we appropriated a pie from the pantry and shared it in chunks with the neighbor boy—we enjoyed the pie, but there was an *arrière goût* which was not pleasant. Now, if a woman ride, and fear that she is injuring her health by so doing, she will not get the same amount of good from the exercise that she would if left to the full abandonment of the glories of sunshine, fresh air, new scenes, companionship and exercise combined.

Should women or girls ride at all? This question has been argued pro and con for some years, and has been studied by medical men and others. While there has been much nonsensical theriozing, such as that “it may cause enlargement and hardening of the muscles lying on the pelvic inlet, and thus by diminishing the size of the canal cause subsequent parturition to be more difficult.” The concensus of opinion of physicians and surgeons is that the exercise of wheeling, properly regulated, and indulged in at proper times, is of great benefit to all sound women and girls.

To this opinion there is hardly an exception, and we may even go further, and say that the wheel is a curative agent, superior to tonics, cod liver oil, wine, massage or change of scene, in many cases of anaemia, neurasthenia, constipation, atonic dyspepsia, general flabbiness and weakness, and amevorrhoea. Certain conditions of organic unsoundness are also improved by the general raising of tone induced by properly regulated cycling.

We would say a word about the proper adjustment of the machine. We have seen many women, and men, too, for that matter, struggling with wheels, in the most ludicrous, cramped and disadvantageous positions. Few men even are sufficiently handy to properly adjust a machine; but a woman, who "can't hit the side of a barn with a stone," is often left to struggle along, encumbered by a senseless dress, and at great mechanical disadvantage, because the dealer has not taken the pains to see that she is fitted, and her husband or brother does not himself know how to make her comfortable.

The question of excitation of the sexual feelings has been brought forward. No doubt, with improperly adjusted seats, a certain amount of pressure or friction may take place upon sensitive parts, and ill consequences to those who ride in such fashion as to induce it. But, as has been said by a physician in speaking of the subject, "if such cases occur it is the woman and not the bicycle which is at fault, and that those who wish to indulge in such practices will not take the trouble to cycle to obtain their gratification." If a woman sit, as she should sit, squarely upon the tuberosities, there is practically no pressure upon the perineum and the genitalia, and there is no more danger of masturbation taking place on the wheel than when walking.

The desire to excel, largely developed in most women, leads them often to untax their powers in cycling. They should, therefore, be cautioned by their physicians to take the exercise under well certain defined conditions. She should keep well within the fatigue limit, especially when learning, and gradually increase the distance travelled as she becomes hardened as to her muscles, and under less nervous strain as she obtains greater command of her wheel. She should not ride during menstruation, nor during the period of pregnancy, except the first three months, nor for at least three months after confinement. In common with men, she should not ride at all if she has bad valvular disease of the heart. Also let her know that scorching or climbing hills is positively not for her, as indeed they should not be for any one except the professional athlete who takes the chances of heart strain, knowing what he is about. With these limitations, we have no hesitation in saying that cycling is a boon and a blessing to all women who indulge in it.

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### THE COCAINE HABIT.

Since the introduction of cocaine about a decade ago, its victims have been numerous, and the list is being increased daily.

The stress of our age, the race for the dollar, for professional or political destruction; the keen competition in all walks of life, but especially

in cities and towns; the over production of professional and business men, to the detriment of those walks of life in which man is a producer, and lives nearer to nature; all go to force the over wrought nervous system to fly for solace to some sweet nepenthe. The desire for some sorrow-forgetting potion seems to come in early in the evolution of the human race; the earlier in the process the cruder the drug. But few aboriginal races have been known who had not some means at their disposal of producing intoxication or narcosis.

In our own day, while the laity deplore the evil effects of alcohol, and while it still continues to be the intoxicant of the masses, a far more deadly and insidious agent is found in opium, or some of its derivations. But the most potent for evil, the quickest in sending its most unhappy victim downward, is cocaine.

Unhappily it is almost entirely in our own profession that the habit has taken root. It is so easily and apparently so innocently acquired, that no wonder many men, of the richest mental endowment, and highest professional training, fall victims to its fatal charms.

A coryza treated by a 4 per cent. solution thrown into the nostrils with an atomizer has been the first step in the downward path. An aching tooth with a few crystals of cocaine pricked into the gum with an ordinary tooth-pick, in another instance was the starting point. Again, many persons who have been addicted to alcohol, or morphia, not having the desired drug at hand have used cocaine as a substitute for once or twice, and so started the habit. Its action is so prompt to brighten the intellect, take away the sense of fatigue, relieve hunger and thirst that it is no wonder the over wrought physician, having once, either by accident or design, tasted its joys, is so liable to return to it when the necessity is felt. From description given by medical men who have been or are victims, we should not think the sensations are as pleasant as those produced by either alcohol or morphia. But of course each series or set of sensations will depend upon the individual temperament of the user. The following graphic description is by a surgeon who has gone through the whole gamut, having taken as high as one hundred and twenty grains of the drug daily, with a largest single dose of twenty grains.

"The first feeling a cocainist has is an indescribable excitement to do something great, to leave a mark. But, alas, this disappears as rapidly as it came, and soon every part of the body seems to cry out for a new syringe. The second sensation—at first, at least, no hallucination—is that his hearing is enormously increased, so that he really (?) hears the flies walking over the paper. Very soon every sound begins to be a remark about himself, mostly of a nasty kind, and he begins to carry on a solitary life, his only companion his beloved syringe. Every passer-by seems to talk about him. Often and often have I stopped persons, or ordered the police to arrest them, thinking they were talking about me. After a relatively short time begins the "hunting of the cocaine bug." You imagine that in your skin worms or similar things are moving along. If you touch them with wool (especially absorbent wool) they run away and disappear, only to peep cautiously out of some corner to see if there is any danger. These worms are projected only on to the cocainist's own

person or clothing. He seems them on his washing, in his skin, creeping along his penholder, but not on other people or things, and not on clothes brought clean from the laundry."

The physiological effects of the drug are summarized by him as follows.

The cocainist early loses all appetite for solid food, but likes sweets, lollies and cakes. Diarrhoea is soon produced, and immediate evacuation often follows big injections. Upon the muscular system the drug, as is generally recognized, acts as a most powerful stimulant for either single or continued effort. It increases also the number of the respiratory and of the cardiac contractions (with vascular dilatation,) as well as the quantity of urine (with large or repeated small doses, incontinence follows,) and, enormously, the amount of sweat. Hence the great loss of weight. It stimulates also sexual appetite, though, later on, power is lost whilst desire remains. After each injection the pupil dilates, but remains dilated only because injections are continued. As regards the brain, mental processes seem quickened, but a kind of hypnosis intervenes, so that the brain works without, and even against the will. Immediately after the injection the cocainist becomes excited, and remains restless whilst under the influence. He likes manual work, however trifling, but has neither will nor ability for mental work, because he is bound to inject every five or ten minutes, or, in fact, because he never ceases to inject. The hallucinations and illusions already mentioned make their appearance early. One syringe self-injected is, in my opinion, absolutely sure to produce the fascinating desire for a second. The individual is almost certainly then a cocainist, and will procure the drug for self-administration, even when apparently it is impossible to do so. All watching is useless. He has thousands of excuses to get a moment to himself, generally in the neighborhood of some chemist. Unscrupulous—even though still aware to some extent of his ties—he will get it, dishonestly if necessary; and even when not craving for it at the moment, he will get it, because his only idea is to have it with him. The sense of right and wrong is not abolished, but he does not care much about trifles. Thus he sinks lower and lower, disregards his personal appearance, and, because they will always show, or sham to show, a certain respect to his higher education, he seeks the association of lower people. He thus becomes a scoundrel or criminal, and does not mind to do so so long as he gets his cocaine. It is extremely seldom that he makes a trial to free himself of the habit, mainly because he does not see any reason to do so. Suicide he never contemplates so long as he can get his beloved drug.

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### THE MEDICAL SERVICE.

Relative rank has been abolished in the militia, and surgeons will in future hold substantive rank.—*Can. Mil. Gaz.* They will be known as surgeon-lieutenant, surgeon-captain, surgeon-major, and surgeon-lieutenant-colonel. To Deputy Surgeon-Gen. Ryerson the thanks of the medical officers of the militia are due. For years he has been fighting for this change, and he has been continually "sat upon" by those in

authority. One major-general told him in the presence of the staff at one of the district camps that medical men were becoming a nuisance, for they wanted too many things. The feeling among the militia generally is that we cannot do too much for the medical staff. In case of active service an effective medical organization can do a great deal for the comfort of the officers and men. They are just as ready to expose themselves to danger as the combatant officers. Sir Fred. Middleton especially complimented Dr. Ryerson, who was then in the Grenadiers, for his daring in exposing himself to the enemy's fire in the discharge of his duties at Batoche.

Dr. Ryerson is at present abroad, and he will, no doubt, be delighted that his long agitation has been successful. It is to be hoped, however, that he will continue the agitation for further reforms. Better equipment must be made available. The Government should do more to encourage training in military ambulance work.

#### THE MORTALITY FROM EMPYEMA IN CHILDHOOD.

Marshall (*Lancet*) writes of the publication of the interesting statistics by Wightman, which induced him to collect the cases of empyema which have been under his care since 1879. All the author's cases have been treated by free incisions, with the exception of two, where, owing to the grave condition of the child and extent of the effusion, it was deemed wisest to relieve the chest of limited aspirations some hours before proceeding to free incisions. This he believes to be a very useful precaution. The total number of cases operated upon by him were forty-five, the deaths being seven. In his list seven cases were under three years of age, and of these two died, one child being one year old and the second one year and nine months.

The method of treatment in every case may be briefly summarized as follows: Free incision, a single tube in infants, but a double-barreled tube in all above the third year; the complete emptying of the chest for the first week twice daily by turning the child upon its side; the early removal of the tube at the end of the first week, and allowing the patient to sit up and move about as early as possible after the first week, thus helping the expansion of the lung.

In connection with the deaths, the following facts are distinctly noteworthy:

1. That, with one exception, all the fatal cases were those of effusion on the left side.
2. In all there was a long history of illness before admission; varying from six weeks to three months.
3. In one, gangrene of the lung was thought to exist, but this could not be demonstrated post-mortem.
4. Of the two deaths occurring in children under two years of age, one was the direct sequence of chicken-pox, and, in both, the children were rachitic to a degree.

## CALOMEL IN HEART DISEASE.

Dr. Maldaresca, *British Medical Journal*, describes the successful results he has obtained with calomel in heart troubles accompanied by distress in breathing, severe disturbances in the circulation, ascites, edema, albuminuria and hypertrophied heart and liver. He gives it in six powders with sugar, 0.10 gram every two hours during the day, for two or three days, following this with 0.10 to 0.10 gram a day for a few days after, when he then commences potassium iodid. Enormous ascites and edemas vanish with this treatment, and even patients in complete cyanosis are restored to comparative health. He ascribes the wonderful action of the calomel to its effect on the liver. It relieves the congestion and thus restores the circulation in the important portal and liver veins which exert a favorable influence on the entire circulation and cures some of the complications, while it relieves all. The gums are frequently affected by the calomel, and he orders a mouth wash from the first, consisting of potassium chlorate 10.0, tannin 0.25, aq. dist. 350. He limits his patients to a milk diet during the treatment, and warns them afterward to refrain from alcohol and excessive exertion, and restrict themselves to a light diet, and persist in the use of potassium iodid. He has treated 107 cases, with five deaths of those that were *in ultimis*, and nine other deaths, all of elderly persons in advanced stages. He notes that the calomel has also the advantage that after it other remedies produce their best effect. He scouts the idea that calomel can form sublimate in the alimentary canal, as a very elevated temperature is required for this.

THE VALUE OF ANTIPYRETICS.—M. Binz, of Bonn, (*La Presse médicale de Belge*) discusses under this head quinine, salicylic acid, antipyrin, antifebrin, thallin, and ethyl alcohol. Quinine acts by a direct depression of cellular activity, and not through its influence on the nervous system. This depressing action is manifested on the pathogenic cells of malarial fever as well as on the normal cells of the organism. The antipyretic action of the drug is, therefore, both local and general. Salicylic acid has properties analogous to those of quinine. It has an energetic antifermentative and antiputrefying action; it is not toxic; it is not destroyed in the human organism. The feeble chemical activity of its sodium salt is not an obstacle to its action in the organism, because the active acid is set free by the carbonic acid of the inflamed tissues. It differs from quinine, however, in having a different action upon the cells of the organism, an action which is analogous to that of the members of the following group. The antipyretic action of antipyrin is obtained by its influence on the central nervous system,—that is, upon the head-regulating centres situated in the brain. The characteristic of its antipyretic action is to weaken actual nervous excitation produced by the agent which caused the fever. Antifebrin, phenacetin, and thallin act in a more or less analogous manner. Thallin, however, must be credited with a direct destructive action on the organisms in the infective fevers.



Alcohol has an appreciable action in lowering the temperature, particularly in the putrid or septic fevers. The causes of this action are many. The nervous system and the circulation are influenced. The excitation of the heart should also be considered, inasmuch as the circulation in the skin is increased and the heat dissipation is accelerated. Again, large doses of alcohol ought to act as an antiseptic agent on the organism, diminishing the vitality of bacteria. There is no post-mortem elevation of temperature in febrile animals which have been treated by large doses of alcohol. Finally, alcohol is a powerful diuretic, and thus there is an added possibility in its use of a rapid elimination of toxins which cause and keep up the fever.

**HEADACHE.**—In headache, vertigo, or other symptoms of secondary cerebral congestion, due to atheromatous degeneration of vessels, Giovanni has obtained good results from

R Ergotin . . . . . gr. iss  
 Extr. of Calabar Bean . . . . . gr. ʒ  
 Extr. of Gentian . . . . . q. s.

M. ft. pil. no. j.

Sig.: From one to ten pills daily, increasing the quantity according to tolerance.—*Le Progress Medical*.

**A NEW TREATMENT FOR UTERINE HÆMORRHAGE**—Berman (*Allg. Wieg. Med. Zeit.*)—Labadie-Lagrave has used a mixture of salol and antipyrine with prompt success in many cases of metrorrhagia and menorrhagia. Equal quantities of salol and antipyrine are warmed over a lamp, in a glass tube, till they are deep brown, and allowed to cool. A fine uterine probe, wound with cotton, is dipped in the liquified mixture and applied direct to the uterine cavity two or three times in succession. The application is painless, and not followed by unpleasant symptoms. A second application is rarely necessary. Labadie-Lagrave has used this treatment since 1893 for uterine hæmorrhage, and has had better success with it than any other. The use of the curette should precede the application if vegetations or fungosities are present.

### Book Reviews.

**A Manual of Medical Jurisprudence and Toxicology**, by Henry C. Chapman, M.D., Professor of Medicine and Medical Jurisprudence in the Jefferson Medical College of Philadelphia, etc., etc. Second Edition, revised, with 55 illustrations and 3 colored plates. Philadelphia, W. B. Saunders; Toronto, Carveth & Co.

The work is enlarged since the edition of 1892 by the addition of a brief bibliography, bearing upon the statements originally made in the text. There are several new figures and tables, and the work may be looked upon as fully up to date, and of great usefulness to students.

**The National Formulary**, a new and revised edition, being a Supplement to The National Dispensatory. Lea Brothers & Co., Philadelphia; Toronto, Carveth & Co.

This little book gives the national formulæ of unofficial preparations, and will be a valuable book of reference to the physician.