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In affiliation with the University of Trinity College, The University of Toronto Queen's University, The University of Manitoba, and specially recognized by the several Royal Colleges of Physicians and Surgeons in Great Britain.

THE WINTER SESSION OF 1898-9 WILL COMMENCE OCTOBER 1, 1898.

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W. B. GEIKIE, M.D., D.C.L., Dean, 52 Maitland Street.

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ORIGINAL ARTICLES AND COMMUNICATIONS.

SERUM THERAPY.*

JOHN L. DAVISON, B.A., Univ. Tor., M.D., C.M., M.R.C.S. Eng.; Member of the Acting Staff of the Toronto General Hospital; Professor of Clinical Medicine Trinity College.—20 Charles Street.

MR. PRESIDENT AND GENTLEMEN,—The wideness of the subject which forms the title of this paper, together with the limited time at my disposal, must be an apology for its imperfectness, or, rather, incompleteness. Much valuable material which I had collected, in the way of statistics, must be left out, and the gist only of the results of observation can be given here.

From conversations with medical men, I have been forced to the conclusion that a deal of loose and unscientific thinking is done about serum therapy by many who should know better; may I, therefore, be allowed to define certain terms necessary to be thoroughly understood if we are to speak and think clearly and scientifically together for a few moments upon this subject, so far-reaching in its importance to us as medical men, and to those who are entrusted to our care.

The whole idea of a serum therapy is based upon the fact that in all germ diseases a substance called antitoxin is produced. To understand how this substance comes into existence let us consider for a moment the terms germs, toxins, serum, antitoxin, unite.

The germ of, say, pneumonia, is the specific cause of the disease, the pneumococcus, while the toxin is a complex poison produced by that germ. If the *germs* of pneumonia be introduced into a susceptible animal they will produce pneumonia, while if its toxins are introduced they will produce acute poisoning.

Antitoxin is one thing, and *serum*, its vehicle or menstruum, is quite another. The antitoxin, nature's remedy against the toxin produced by the life processes of the germ in the tissues of the animal body, is a substance dissolved in the serum, and is a remedy, an antidote against the toxin in the system of the victim of, say, pneumonia.

Each germ disease has its toxin, and, presumably, its antitoxin. Antitoxin does not exist in any appreciable quantity in the blood of healthy animals, nor is it found in nature at all in sufficient concentration to be useful as a therapeutic agent. It is found in milk, in the blood of the horse

* Read before the Ontario Medical Association.

and in human blood, but never, so far as our present knowledge goes, in any appreciable quantities, before the animal has been acted upon artificially, or has contracted the disease. Shall we consider the *modus operandi* of the artificial production of this wonderful substance?

Commercial enterprise, united to scientific research, has given it to us —this *mish allah*, to which we, and scientific men all over the world, are to-day looking as THE Mecca—our Mecca in the preservation of human life.

Take that best-known disease, diphtheria. In the laboratory, the toxins are separated from the germs which produce them, by a delicate filtering process through unglazed porcelain. The details of the process are minute, and their description would consume too much of your time to be spoken of here. Suffice it to say that the production of the toxin of the Klebs-Lœffler bacillus is safeguarded by every means that human ingenuity can suggest, science compass, and money procure.

This product, *toxin*, is a clear fluid, sparkling and straw-colored, which in passing through the filter of unglazed porcelain has left behind all germs and suspended particles. It is really a solution of toxin in an organic fluid, and goes by the name of toxin, but, it should be remembered, contains also various complex substances, as peptones, ptomaines, etc.

The substance, however, which gives the whole a virtue is the toxine, the alkaloidal, may I call it, product of the diphtheria germs, when grown in a suitable culture medium.

This then is the substance, this is the poison produced artificially in the laboratory, which when produced naturally in the tissues of the human body, is dissolved in the blood, carried to every cell of the organism, and produces the baneful effects with which we are all unhappily too familiar, by its toxic action upon the nerve centres and through them upon the whole economy, for be it remembered that it is not the *germs* that cause disease and death in diphtheria, but their product, toxin, just as any other poison would do, as, say, morphia. The morphia is manufactured outside the body and if introduced into the circulation in sufficient quantity will cause death in its own peculiar way. The toxin of diphtheria is naturally manufactured in the body, and if produced in sufficient quantity will also cause death in its own peculiar way. We have said this much about toxin as leading up to the antidote, antitoxin.

The toxin has been produced under conditions over which we have control, without recourse to nature's method of growing it in the animal body. We must now, as Houghton says, stand aside, and allow the remainder of the miracle to be wrought unseen, as no one has yet been able to produce antitoxin satisfactorily, except in the animal body.

The horse is selected as the most suitable animal on which the antitoxin shall be produced. He is quite susceptible to human infectious diseases, and has a large amount of blood from which the antitoxin-bearing serum may be obtained after it has been produced there, a course of treatment extending over months being required to saturate his blood, if I may be allowed the expression, with antitoxin. Small, gradually increasing doses of the *artificially* prepared toxin are

injected, either subcutaneously or into the veins. The greatest caution is required in regulating the dose, especially at first, or diphtheria paralysis will occur and prove rapidly fatal, and this though no germs of diphtheria have been introduced, but only their product, the toxin, a matter of great significance. When the dose is not sufficiently large to produce death, paralysis of the pharyngeal muscles will sometimes occur, and regurgitation of fluids take place, as in human beings after diphtheria.

It is found that each injection produces a decided reaction, the temperature rising from 1 to 3° F., falling to normal in three days, with a secondary rise in 24 hours, soon again becoming normal, when the injection may be repeated. The dose of toxin is gradually increased, and it is supposed that after the lapse of several months of weekly injections of many hundred times the amount of toxin which would have proved fatal at the commencement, that his blood must contain considerable quantities of the protecting agent, *anti*-toxin.

That it does contain it, as also its exact amount, is proven by treating guinea-pigs.

Thus when, under the greatest precautions, the serum of the immunized horse is drawn off, we have a product dissolved in that sterile serum, which should, if the theory be correct, counteract the toxin of the K.-L. bacillus. This substance, the much-desired antitoxin, has been poured out by nature in the toxinized horse, to overcome the deleterious action of the toxin upon his organism.

To determine its actual presence, as also its exact amount, an ingenious process is gone through. The guinea-pig is selected as the animal in which to prove the antitoxin, if I am using the word prove correctly, according to its meaning by our homœopathic brethren.

Ten times the minimum fatal dose of diphtheria poison is mixed with varying amounts of the antitoxin-bearing serum, and injected into guinea-pigs.

When the smallest amount of serum is found, which will protect these animals from the effects of 10 times the minimum fatal dose of diphtheria toxin, the therapeutic efficacy of the product is easily determined.

To illustrate—again following Dr. Houghton. Suppose a guinea-pig of 250 grains weight does not become sick when given subcutaneously, ten times the amount of the minimum fatal dose of diphtheria toxin, mixed with 1/5000 c.c. of the serum, containing the diphtheria antitoxin.

We say that each c.c. of the serum contains 500 antitoxin *units* following Behring's law that "each antitoxin unit is ten times the amount of anti-diphtheritic serum required to protect a guinea-pig, against ten times the lethal dose of diphtheria toxin, when the two are mixed together and injected subcutaneously."

Thus we see how by a comparatively simple, yet ingenious process, the serum is tested, not only for the presence of this wonderful product poured out by nature in the economy of the animal, to antidote the toxin or poison of the bacilli of diphtheria growing in his tissues, but also for the amount of it which is present, and which, as you have seen, is determined with almost mathematical exactness. As you will readily conceive, the serum varies greatly in strength, both from different horses, and at

different times in the same animal, so that it is necessary to test each sample drawn and put up in containers holding the proper number of units for a dose, irrespective of the amount of the fluid-serum in which it is dissolved, the dose varying from 250 units for immunizing purposes to 1,500 units for the most severe case of diphtheria. Here then we have, weighed and measured, as it were, this greatly-to-be-desired product. You see that it is not manufactured. Nature does it for us in the economy of the animal whose tissues have been stimulated by the toxine. It is asserted that antitoxin can be manufactured synthetically by the passage of a powerful electric current, but not of sufficient strength to be of use as a therapeutic agent. The fact, as Johns says, that a synthetic product is possible, is in itself an argument that antitoxin, as such, exists in nature.

Now, not to get too far away from our text, let us remember that serum therapy is really antitoxin therapy, and that we should have as many antitoxins as we have toxins; beneficent nature in the process of evolution having, no doubt, prepared for each lethal product its own proper antidote, and that we have as many toxines as we have specific diseases, that is, pathological processes due to specific germs. Now this is, to my mind, a most comfortable and comforting idea. It appeals to all that is rational in us. Nothing goes by chance in the universe. If an apple fall, or a Lincoln be shot, a land slide occur, or a planet burn out, it is the outcome of law—universal, everlasting, unchangeable, inexorable, and no doubt on the whole beneficent. We are too small, too finite, too cramped as to our environment to see the end of the working of this law. We are not yet able to generalize, we see the individual when disaster and affliction overtakes us either personally, as a community, as a nation, or as a world. Our powers of combination are too limited to look upon nature's doings with nature's eyes. In the application of that inexorable law of nature it matters not whether the individual be great (what a travesty upon nature for us to call any individual great) or small, the emperor or the peasant, the scientist or the yokel. The individual is apparently not considered. As someone has well put it:—

> "So careful of the type she seems,
> So careless of the single life."

I said the thought that each specific disease has its own toxin, and consequently its antitoxin is comfortable and comforting. It lifts our conception of disease out of the Cimmerian darkness of that of a few centuries, or even a few decades ago. But we are too recently heroes of scientific light to have gotten rid of the superstitious *in toto*.

The most advanced scientists of to-day live too near the age when witches were burned to be free from that "taint i' the blood," that savagery which caused some of the highest spirits in the Augustan age of English literature to carry about with them effigies, mannikins of their enemies, the pricking and stabbing of which with pins, did in their belief cause disease and death to come upon the originals of the effigies, though thousands of miles away. We live too near the age when the Iroquois devoured the raw bleeding heart of his victim, believing that

thereby he would incorporate into himself all the courage, and, perhaps, some of the ferocity of the slain one. We are too near to the time when macerated testicles were shown to have restored the virility of youth, its spring and elasticity to wrinkled age. But I had better pause, or I shall presently trench upon that new scientific ground—"internal secretion of ductless glands." Happily the testicles are not ductless, their secretion is not internal, so I have saved myself.

How can we hope to be free from the taint of superstition? From the medical superstition, rank, ignorant and intolerant of not the old time, but of recent times, when even I, a neophyte, can remember one who was then one of the brightest, most scientific and up-to-date medical teachers of Toronto laugh at the bacilli bugs as he called them, of pulmonary tuberculosis; and this, though he was a good microscopist, and knew pathology as it was then generally known.

I believe that most of us have gotten rid, so far as can be done by vigil and fasting, by prayer and self-command, of that horrible old man of the sea, medical superstition. That where our fathers saw the hand of God, we see drains—that we are becoming materialists as to disease. The spiritual theory thereof, the old-fashioned humors, the essences, the heaven-sent plague, no longer satisfy us; we have to-day locusts and toads, but they are microscopic.

I have said that, reasonably, we should have as many toxins as we have specific pathogenic organisms; and consequently as many antitoxins. This is probably true. Yet, though a stupendous amount of work has been done by skilled investigators, our results are not very reassuring. May we take it for granted that it is accepted by the profession that diphtheria is rendered less fatal by the timely and skilful use of its antitoxin? In my humble opinion, judging from necessarily limited experience with the remedy, as well as from the very abundant literature which has grown by leaps and bounds in the past year, the antitoxin of diphtheria has lowered the mortality of the disease.

It would be easy for me to read statistics to you for an hour, or show them galore, both private and public, from hospitals, boards of health, and other sources, but time presses.

Now let us remember that the subject is still in its swaddling clothes, that time enough has not elapsed to "prove all things," according to the scriptural injunction; that men are often led a dance after a will-o'-the-wisp, through their own imaginations and zeal; witness the specifics which are from time to time brought forward by earnest, hardworking and zealous men, striving after the truth, and betimes fondly imagining they have found it. Let us remember that statistics are frequently deadly instruments. The words of the old divine should be constantly in our minds, who said there are three kinds of falsehoods, to wit: lies, d—d lies, and statistics.

Yet, having all this in mind, I think we may be convinced that the mortality of diphtheria is lessened by the use of antitoxin. Virchow, who at first opposed the use of antitoxin, says: "All theoretical considerations must give way to the brute force of the figures, and I consider it the duty of every physician to use a remedy giving such clinical results." You have all seen figures relative to the subject.

Let me repeat here just a few. Dr. Biggs had information of 79,085 cases treated with antitoxin in different parts of the world, with a mortality of about 16%.

In cases treated without antitoxin the death rate was between 30 and 40%. In another series of cases, mentioned by Cheatham (D. & H. G.), 2,930 cases treated with a. t. gave a mortality of 14.9%; while of 3,625 cases treated without antitoxin, during the same time, or during intervals of forced interruption (owing to lack of antitoxin), 1,455 died, a mortality of 40%. I have scores of conclusions from all parts of the world, and while they differ more or less widely as to results, all collective investigation, the reports of all public institutions and health boards which I have, as well as those of most private individuals, agree in this, that the mortality is lessened by the use of antitoxin.

How account for the varying reports? Several factors enter into the production of this variance.

First, the time at which the injection is given. If a child has been ill two or three days, and the physician waits till a bacteriolo[illegible] report has been made, the loss of these hours may well mean a loss of life, and consequent variance in statistical results.

The report of the Am. Paediatric Soc. shows that early treatment is necessary. Thus the mortality in the grand total of 5,794 cases was 12.3%, while of 4,120 cases treated within the first three days the death rate was 7.3%, including every case reported, but if from these is deducted the cases which were moribund at the time of making the injection or died within 24 hours, the mortality was 4.8%, thus substantiating Behring's original claim that if cases were injected on the first or second days the mortality would not be more than 5%. Dillon Brown's recent report, as given before the last meeting of the Trin Al. Assoc., shows conclusively that the number of deaths is lessened in laryngeal diphtheria since the use of antitoxin.

The quantity used will also make a difference in the results. My time will only permit me to say that the consensus of opinion of those who are best able to judge, as gathered from the literature of the subject, would seem to be that, on the whole, rather larger doses should be given than have been used. The lately introduced concentrated serum removes all objections as to the largeness of the dose of the medicine, for it must be confessed that the injection of so large a quantity of serum into a child is quite a heroic measure.

The quality of the product. You will easily understand that the quailty, or strength of the serum will vary greatly and thus cause variations in the conclusions arrived at. I believe that our own P., D. & Co. make as good and reliable a serum as is put upon the market in any part of the world.

In this connection let me give you Professor Abbott's, conclusions drawn from 19 samples of serum, foreign and American, bought in the open market in different cities of the U.S. The labels having been removed and numbers substituted, the professor examined them. He found that "the majority of the samples exhibited the average required strength. Four were unusually rich in protective substance, while in

three there was a relative deficiency of antitoxic properties. Some of the samples proved to be of unusual strength, while others were shown to be so poor in antitoxin as to demonstrate their comparative uselessness for therapeutic purposes. In some instances there was a great discrepancy in the actual strength and in the advertised strength. Certain of the samples from the same manufacturer, purchased in different markets, at the same and different dates, showed a wide variation; other samples retained their strength absolutely from three to twelve months, while some contained only about two-thirds of their original strength at the end of three or six months."

Considering then the time, the quantity administered, and the quality of the product, we can easily understand how reports differ as to results and thus apparently stultify statistics, honestly gathered. The main point is, let me repeat, that from all sides comes the assurance that the use of the product lessens the mortality. One word about the fatalities which have occurred and which probably makes us consider the possibility of such a case happening in our own experience.

From all the information I can gather on the subject there have been six deaths in over 1,600,000 injections and only one in which it could be proven without a doubt that it was due to the serum. True, in three of the cases death might not have occurred if the injection had not been made. This showing would not prevent any one using it, even had the whole six deaths been shown to have been directly due to it, or three times six. The sad part of it is that in some of these cases the injections were made for immunity.

It is true there have been arrayed against serum therapy, as exemplified in the antitoxin treatment of diphtheria, numerous writers, the most prominent among whom are Dr. Lennox Browne, of London, Eng, and Dr. Jos. Winters, of N. Y. city.

These names give an air of respectability to the camp of unbelievers, who mainly consist, I believe, of men whose ignorance of the subject, joined to their own prejudices, lead them to take strong partisan positions, and endeavor to hold them by scoffing, raillery and abuse, rather than by scientific argument. I have carefully read most of what has been advanced by this camp of anti-antitoxinists, and I may say that they have not shaken in any respect my belief in the efficacy of the antitoxin treatment of diphtheria, nor lessened my hope that in the fulness of time, most, if not all, germ diseases will be most successfully and scientifically treated by serum therapy.

Those critics attack bitterly, and sometimes ignorantly, the principles enunciated by scientific men, working for the love of truth and the benefit of mankind; but they give us nothing instead of the gods they would destroy. Prof. Soltman, quoting from a German poet, puts it:

> The best critics in the world are they,
> Who along with what they gainsay,
> Suggest another and a better way.

We should be, I think, conservative in medicine, and not easily or willingly give up old land-marks, remembering that we have not a monopoly of the wisdom of the medical world in our time; remembering also that

the value of clinical evidence is greater far than that of any amount of theorizing. This one thing may be said of serum therapy, that it was evolved in the laboratory, but that clinical evidence apparently endorses all that the theorists claimed for it.

Any one who has seen, as I have, a whole cast of the pharynx and tonsils curl up and separate, under the action of the serum injection, and the case rapidly proceed to convalescence, which, under the old plans of treatment, would have lasted days or a week and then often result fatally, cannot but believe that the new medication is a great advance on the old; that antitoxin, which some of us were inclined to be sceptical about, and make jokes and puns about, is an *esse*, one which science has evolved or, rather, utilized for the amelioration of the sufferings and preservation of life of the human race.

Now, seductive as is the subject, I must pass on to a rapid survey of the other more important serums which have been exploited. My review cannot be exhaustive; for much as I would like to deal fully with the subject, I fear your patience is already tried; and I hope Dr. McMahon and others who follow in the discussion may fill the breach I shall leave.

When we look over the field occupied by the other germ diseases, and contemplate the results that have been achieved, they are somewhat disappointing, looked at from the standpoint of what has been done in diphtheria. We cannot say that with the exception of tetanus and the bubo plague in the east, any other disease has been brought to bay by the antitoxin treatment.

It is true we have cases, few in number, of other diseases; scarlet fever, for instance, reported by such men as Marmorek, in which the anti streptococcic serum is said to have proved useful. Thus he reports from Oct. to Dec., 1895, 95 children treated with the serum, in doses of from 10 to 80 cc. according to the tensity of the case. He notes that the effect on the lymphatic enlargement was especially marked, 19 cases resolved without suppuration.

Four cases of double otitis were more promptly controlled by the serum injections.

The kidneys were re-established as to function by one or two doses, after albumen had shown on urine. False membrane and delirium rapidly disappeared, and the general condition was greatly improved. The only inconvenience noted was the appearance of fleeting erythema. Baginsky, in Berlin, reports on the treatment of 57 cases with serum supplied by Marmorek and Roux. The small supply of serum prevented his using the doses recommended by Marmorek, but the death-rate was 14.6%, while the average death-rate for 5 years before was 24.9%. He does not, however, attach any importance to these figures, as there are naturally great variations in the mortality in this disease. His only conclusions were that, at least, the injections did no harm.—*McClintock Jour. Am. Med. Association.*

These cases are too few from which to draw conclusions, but the eminent author believes the remedy will render real service in the treatment of scarlet fever.—*La Clinique; Arch. of Pœdiatrics.*

The harmful effects of streptococci in various diseases, which have, besides their own specific germ, as in measles, diphtheria, scarlet fever,

broncho-pneumonia; also the fact that puerperal fever, erysipelas and a goodly number of the septicæmias, are said to be due to them alone, led observers to hope that when an antistreptococcic serum was obtained, we should have the same beneficent results flowing from its exhibition in the above named diseases, as have been seen in the antitoxin treatment of diphtheria. So far, however, with the exception of the above-mentioned cases reported by Marmorek and Baginsky, I have not seen, nor have I been able to find any satisfactory report as to their use.

There are many species of these cocci, and it has been found that the antitoxin of any one of them is antitoxic to the whole group of streptococci.

There has been done, and is still being done, a vast amount of work with this serum, commensurate, we should hope, with its vast importance. The New York Board of Health is having it carefully studied in the Willard Parker Hospital, and the great reputation and well-known ability of the scientific corps of this board and of the gentlemen composing the staff of the hospital is a sufficient guarantee that the work will be well done. The profession of this country owes much to Drs. Biggs, Park and Prudden.

Another serum of which we have all heard much, and from which we hoped much, was, or is, Coley's erysipelas serum for malignant tumors. Competent observers had noted improvement and even cure in malignant tumors after an intercurrent attack of erysipelas. The inoculation of erysipelas upon the region of the tumor was tried, but was inexpedient on account of fatal results arising from the erysipelas, though the results as to the tumors were very promising.

In 1894 Coley attempted to avoid the result of erysipelas by using the toxins of the germ. This gave good results, and he reported a number of cures. Later he used a mixture of the toxins of erysipelas and prodigiosus with better results.

His conclusions were:

(*a*) The curative action of erysipelas upon malignant tumors is an established fact.

(*b*) This action is much more powerful in sarcoma than in carcinoma.

(*c*) This action is chiefly due to the toxins of erysipelas streptococcus, which may be isolated and used with safety.

(*d*) This action is greatly increased by the addition of the toxins of the bacillus prodigiosus.

These conclusions, I may say, have not been borne out by experience, though a good number of medical men have faith in the curative action of the toxin in such cases.

Two cases of inoperable sarcoma have been treated by me with the mixed serum. In neither was a cure effected. The best I could say in regard to them is that they apparently prolonged life in one case, I should judge, about three months, and in the other, four months. Whether this be correct or not is, of course, more or less speculative. At any rate, the intense discomfort suffered by the patient in the matter of increased pain, severe rigors, increased temperature due to the reaction of the serum was very considerable. I don't think I should now employ

the serum if I had a case of inoperable sarcoma even, unless it was strongly wished by the patient or friends after the case had been set forth to them.

Emmerich and Scholl and Sta hold that they are curative, but they have proved useless on so many cases that few clinicians support them.

In the bubo plague Yersin has been eminently successful with the serum therapy. In his report in the *Annales d'Institut Pasteur*, Jan., 1897, *Columbus Med. Jour.*, Mar., '97, we have, based on the results of the treatment of the plague at Amoy, China, the following *resume:*

Six patients were in the first day of the disease; cure was obtained in all cases in from twelve to twenty-four hours, without suppuration of the bubo by the injection of 20 c.c. of the serum. Six were in the second day of the disease. The recovery was slower, and to obtain it I had to inject from 30 to 50 c c. of serum. It was complete in three or four days without suppuration of the bubo. Four were in the third day. The fever persisted one or two days after the injections. The recovery was slower, and the buboes suppurated in two cases; 40 to 60 c.c. of serum were injected. Three were in the third day. They recovered in five or six days. One bubo suppurated; serum injected from 20 to 50 c.c. Four were in the fifth day. Two are dead whose state was desperate at the time of treatment. Two recovered; serum used, 60 to 90 c.c. These twenty-three patients comprise six boys, three girls, eight men, four women, one old man, one old woman. To the present twenty-six patients have been treated by the serum, three at Canton, twenty-three at Amoy. They have furnished two deaths, a mortality of 7.6 per cent. Twenty-six cases is surely few to prove a remedy is specific and efficacious. I confess it readily and am the first to declare new experiments are necessary; but if one considers that the plague is the most deadly of human maladies, we shall be convinced that our twenty-six cases have a singular value.

All who have observed the plague estimate that it causes a mortality of not less than 80 per cent., and as most of the patients which I treated showed most of the alarming symptoms, there is no reason to fear that the results obtained may be contradicted in the end. Generally the plague does not last long. Death comes frequently in three or four days. It is therefore necessary to interfere at once. It is the easier to cure the sooner the serum is injected.

The foregoing is very encouraging. It emphasizes the common-sense idea that we should not wait until our patients are moribund before we use our serum; clinical evidence of a disease being sufficient to warrant our proceeding while waiting for bacteriological confirmation of our diagnosis. I wish I could report as great success on the treatment of diseases we have to grapple with nearer home, such as typhoid, tuberculosis, smallpox and cholera.

I have seen quite a few isolated reports, scattered here and there through various medical journals, bearing upon the results obtained in these diseases. But they are not reassuring, even if they were large enough in number to enable conclusions to be drawn.

As to typhoid, animals have been immunized and a protective action

can be demonstrated; but clinically the results are not convincing (McClintock). Haffkens has been working with this disease.

This principle holds good in cholera, as is shown by the results, and we may hope similar good results will soon be shown to follow in the plague. Yersin's serum is prophylactic, but the protection is quite limited as to duration.

Each method, then, has its advantages: Haffkens' as to prevention, and Yersin's as to the cure of the disease. Haffkens' method is evidently unsuitable for the cure of the disease, as injecting the germs would be but adding fuel to the fire.

I shall have to simply enumerate some of the other diseases in which work is being done in this direction, as I fear I have already trespassed upon your patience.

Tuberculosis, about which Dr. McMahon has some useful and interesting matter to present to you; cholera, with which I hope we may not have any experience; pneumonia, rabies, snake venom, syphilis, smallpox—all these are being studied by men well qualified to deal with them, and with a zeal and unity of purpose which augurs well for the ultimate result. When we consider that in point of fact, as well as in time, this new therapy is in its merest infancy, and that its study is being conducted on the strictest lines known to the most advanced scientists of to-day, should not our hearts beat high, should we not be sanguine as to the final result?

I believe that the imagination of even the most sanguine amongst us to-day could not shadow forth the victories of this new line of thought and research. Surely when we are scientifically certain of the cause of disease, when this cause can be weighed and measured, cultivated, increased or lessened in strength, at the will of the investigator, time and patience must surely bring to us the means of destroying it in the animal body.

In my opinion, no other body of men are so truly doing the will of the Almighty as are these self-sacrificing men who by daily and nightly toil are striving to unravel these mysteries, and to apply this knowledge to the amelioration of the suffering primarily of the human race, and incidentally of the lower animals.

Surely such zeal in so worthy a cause shall have its reward

THE REMOVAL OF DISEASED OVARIES, TUBES, &c., BY ENUCLEATION, WITH LIGATION OF VESSELS ONLY.—FORCEPS AS TEMPORARY HÆMOSTATICS, LEVERS AND TRACTORS, AN ADDITION TO THE ENUCLEATION METHOD.

BY J. COPLIN STINSON, M.D., C.M., SAN FRANCISCO, CAL.

In deciding on an operation for the removal of an ovarian tumor, pyosalpynx, &c., we should use a method which is simple, safe, scientific and will not be followed by any untoward symptoms. Such a method we have in enucleation with ligation of vessels only. This method is, in most cases, a comparatively simple procedure. At times it is difficult, *e.g.*, when the pedicles are short, deeply located in the pelvis and thus cannot be easily controlled, when the broad ligaments retract quickly, when the surgeon cannot or does not wish to keep close to the cyst or tumor, &c., when the broad ligaments are thickened and very vascular, when the uterus, &c. are fixed by periuterine or other adhesions and in most operations for the removal of the uterus either vaginal, abdominal or combined vagino-abdominal hysterectomy. Under these circumstances one should first enucleate the mass as far as possible so as to expose the pedicle which is then clamped and cut off between the mass to be removed and the clamps. By drawing moderately on the clamps, using the latter as levers and tractors, the severed pedicle is brought to the surface, inspected for open mouths of vessels which are ligated, separated with fine catgut. In such cases the forceps are an addition to the enucleation method. It is the common experience among operators that after the removal of an irreparably diseased appendage or appendages that the patients are not cured of their symptoms. I believe that the continuance of the symptoms in most of such cases is due to the universal custom of ligating the pedicles of the ovary, tube or broad ligaments with mass ligatures. The pedicle should not be tied with a mass ligature, or transfixed or tied in sections, for while these ligatures do control the vascular supply of the structures that have been removed, they also interfere with the physiological actions, relations and uses of the other structures which make up the pedicle. Enucleation with ligation of vessels only, does away with mass non-absorbable, dead and wandering ligatures, sloughing, painful and adherent stumps, pelvic exudates, the cautery, and secondary adhesions, &c., any of which cause a continuance of the symptoms after the diseased structure has been removed. In earlier papers (*N. Y. Medical Record*, July 20th, 1895, *The Therapeutic Gazette*, May, 1896, Transactions of the San Francisco County Medical Society, Dec. 6, 1896), I described and reported cases in which I had used successfully the enucleation method.

Two principles are involved in the satisfactory performance of enucleation. The first is to dissect as close as possible to the mass to be removed; bleeding is thus reduced to the minimum as one divides only arterioles or capillaries, which stop oozing almost at once. The second is

to keep the immediate dissection well in view and if any vessel is divided, catch it at once with forceps and ligate with fine catgut.

The technique of enucleation is best described by citing a couple of my cases.

CASE I.—Endometritis, tubo-ovarian abscess and ovarian cystoma with adhesions—operation under chloroform administered by the drop method. The patient was first placed in the lithotomy position, cervix dilated, uterus curetted, carbolic acid and iodine, 1 in 4, applied to the interior of the uterus, cervix again dilated, and the uterus irrigated freely with boiled water. The legs were then extended and an incision, about three inches long, was made above the pubes, dividing, slightly to one side of the median line, the skin, subcutaneous tissues, the fascia, the rectus and the peritoneum. On introducing the fingers the omentum and intestines were found adherent to the appendages and the fundus uteri. On account of the extent of the adhesions and the size of the masses, it was found necessary to enlarge the incision slightly. The entire length of the incision was now three inches and three-quarters. The fundus uteri could not be felt, so the adhesions on the left side were separated with the fingers till the mass on this side could be partially felt. During the separation of adhesions the mass ruptured and about one-half a pint of creamy, chocolate-colored fluid escaped. Pitcherful after pitcherful of hot water was poured in till the fluid came away clear. Carefully working toward the uterus, separating the adhesions, after awhile the fundus was exposed. The left mass was enucleated; beginning at its outer extremity, the blunt dissection, aided at times by cuts with the scalpel, was carried as close as possible to the mass (a tubo-ovarian abscess). The enucleation was carried as far inward as the uterus, from which the mass was removed by dissection flush with the uterus. The pedicle was not tied but was removed by enucleation without ligature, clamp or cautery. There was no bleeding, so no ligature or clamp was applied. The adhesions behind the uterus were separated, except deep down in the pelvis. The right tube and ovary were next sought for. The ovary was found buried in adhesion. The tube was apparently normal. The ovary which contained cyst, the size of a mandarin, was separated from the adhesions and the surroundings, and, with the tube, was enucleated by blunt dissection aided at times by cuts with the scalpel. When the uterine end of the tube was reached, the serosa of the tube, about one-quarter of an inch from the uterine cornua, was divided in a circle and dissected back to the uterus. The tube was then cut off at the tubo-uterine junction and the cut edges of the serosa, which had been dissected back, were united by a continuous catgut suture. The oozing from the adhesions was arrested by hot water and sponge pressure. A couple of tares on the uterine fundus were closed with continuous catgut sutures. Two narrow gauze wicks were carried down into the cul-de-sae, and the ends brought out through the lower angle of the incision. The omentum was drawn down and spread over the intestines. The cut edges of the peritoneum were united with a continuous fine chromicized catgut suture; the divided edges of the rectus and the fascia by a continuous chromicized tendon suture. For the nice approximation of the fascia, a layer of

chromicized catgut sutures was also introduced. The skin edges were sutured with fine silk, only sufficient room was left at the lower angle of the incision for the passage of the gauze wicks. The uterus was not removed as it was in good position and had been curetted. The patient made a satisfactory recovery. The wound healed by primary union, highest temperature 101 rectal. The small drainage wound was healed three weeks after the operation. At last report, Jan. 15, 1897, was in splendid health, complained only at times of slight pains in the pelvis when the bowels were constipated.

CASE II.—FIBROID OF THE OVARY.—Operation under chloroform, administered by the drop method. The patient was placed in the dorsal position with the legs extended. A median incision was made above the pubes, extending within about four inches of the ensiform cartilage. On opening the peritoneum some adhesions were found; these were separated. The tumor, which weighed about fourteen pounds, was brought well to the surface. The pedicle, which was short, but broad, was clamped transversely close to the tumor with four or five long hysterectomy forceps, and then severed between the tumor and the clamps. Drawing moderately on the forceps, using the latter as levers and tractors, the severed pedicle was brought to the surface, the cut surface inspected and open mouths of vessels ligated separately with fine catgut, then the clamps were removed, first applying small forceps at the upper and lower angles of the pedicle. The cut edges of the serous coat of the pedicle were united with a continuous fine catgut suture, so that there would be no raw surfaces left to form adhesions. The tube was normal and was not removed. The other tube and ovary were examined and were found normal. The cut edges of the peritoneum were united with a continuous catgut suture. The fascia, with a chromicized tendon suture, and the skin edges also united without drainage. The patient made a satisfactory recovery, and was up and around three weeks after the operation. At last report, Jan. 1, 1897, was in splendid health; menstruation regular; no pelvic symptoms.

The writer has successfully removed ovarian tumors, cysts and abscesses, adherent ovaries and tubes, etc, by enucleation, ligating the vessels only. In two instances the appendages were removed by enucleation without ligature, clamp or cautery. No vessel was ligated as there was no bleeding. The enucleation operation is advocated for the removal of all such masses as ovarian cysts, tumors, etc., irreparably damaged tubes, *e.g.* pyosalpynx, etc., tubes, the seat of ectopic gestation, etc., as the safest, simplest, most scientific and æsthetic method of dealing with such masses. From a study of many cases treated by the several methods of operation, I can only draw the following conclusions:—

1. That an irreparably damaged tube ovary, etc., should be removed by enucleation with ligation of vessels only; using only absorbable ligatures.

2. That enucleation is the simplest, safest, most scientific and æsthetic method of removing an ovarian cyst tumor, etc., of the ovary, the tube, the uterus, etc. There is no danger of hemorrhage; if a vessel is severed it can be caught at once and ligated.

3. That the ligation of vessels only does away with the tying off in sections, the tying and transfixing of pedicles, mass, non-absorbable, dead and wandering ligatures, sloughing and painful stumps, pelvic exudates, adhesions, and the cautery, etc.

4. That, as no untoward symptoms follow the enucleation method, there is no secondary operation necessary.

5. That with enucleation there is little or no danger of injuring adjacent viscera; recovery is rapid, and the danger of sepsis is reduced to the minimum.

6. That when a fallopian tube is removed, it should be completely; no stumps should be left. When the serosa of the tube at the tubo-uterine junction is not totally destroyed, it should be divided in a circle about one-quarter of an inch from the uterine coruna, dissected back to the uterus, and after the removal of the tube, the cut edges united by a continuous fine catgut suture.

7. That in removing an appendage, etc., by enucleation the cut edges of the brood ligament should be united by a continuous absorbable suture.

8. That even when both appendages are removed, a uterus that is in good position, and not irreparably diseased, should not be removed.

9. That it must not be forgotten that at times enucleation is difficult. Under such circumstances the surgeon should first separate the adhesions, then enucleate the mass so as to expose the pedicle which is clamped with long forceps, and then cut across between the mass to be removed and the clamps. The forceps are used as temporary hæmostatic clamps, levers and tractors, while the vessels are ligated separately with fine catgut, and are thus an addition to the enucleation method.

THE ADMINISTRATION OF ENEMATA OF BLOOD IN TUBERCULOSIS.—Dr. Whittaker has found marked increase in weight and gain in nutrition to follow their repeated use. To each quart of blood he adds half an ounce of bicarbonate of soda and sugar of milk and one grain of common salt. Two pints of a mixture consisting of equal parts of water and such blood are thrown high up the rectum. Bullock's blood was at one time, we believe, a favorite remedy in Paris, where patients used to visit the abattoirs in order to get it freshly drawn.—*The Practitioner.*

A NOVEL TREATMENT FOR ASTHMA, consisting of injections of antidiphtheritic serum, has been tried by L. Revilliod. The remedy was used because it is excreted by the respiratory tract, as shown by its effect in loosening the false membranes in diphtheria. This reason seems somewhat far-fetched. Seven cases were treated; three being cured, one permanently relieved, and three temporarily relieved. The injections, which each amounted to 10 c.cm, and numbered from three to ten, were given at considerable intervals, usually when an attack threatened. Under this treatment the attacks became less severe and occurred at greater intervals. We think it right to record this treatment, but we would not feel justified in employing it ourselves.—*Rev. Méd. de la Suisse Rom. Practitioner.*

THE TREATMENT OF SEPTICEMIA BY BLOOD LETTING AND INFUSION OF SALT SOLUTION, WITH REPORT OF A CASE.

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I am under obligations to Dr. Halsted for the privilege of reporting this case, which occurred in his practice.

Riggin Buckler, aged fifteen; seen first June 30th, 1898, at Blue Ridge Summit. Complaint, abdominal pain in the hypogastric region; family history, negative.

Past history: Suffered the usual diseases of childhood. Was always a delicate child.

Appendix history: Since early childhood patient has had occasional attacks of indigestion, intestinal disturbance, associated with more or less severe abdominal pain. Dr. Lockwood saw him frequently during these attacks, generally put him to bed and administered calomel, and the boy would be well in a day or two. It is probable that all of these attacks were mild inflammations of the appendix.

Present attack was of five days' duration, and began June 25th, just as all previous ones had, and at first seemed to respond to the usual remedies, so much so that his temperature fell from 103° on June 27th to 101° next day. On July 29th patient said he felt better, and his temperature was only 100°, but during the night he became slightly delirious and nausea and vomiting were frequent. Dr. Halsted was then summoned.

Day of operation, June 30th, 8.30 a.m. Patient rational; abdomen distended. Tenderness over sigmoid and hypogastric region. No tenderness in the iliac fossa, but a soft, boggy mass felt in the pelvis. Diagnosis of probable appendiceal abscess made, though the symptoms and location of abscess were rather unusual.

Operation: Dr. Halsted operated, assisted by Drs. Lockwood, Van Ness, H. L. Smith Buckler, and the writer. Ether was used. Laparotomy incision through the right rectus nine inches long. A slightly turbid fluid in the general abdominal cavity was found; intestines hyperemic, peritoneal gloss slightly impaired; evident early general peritonitis; mass in the pelvis surrounded by adherent intestines; not adherent to anterior abdominal wall. After breaking through these a large abscess was found, in which lay a very large necrotic appendix, which was perforated at its base. Pus was evacuated, appendix ligated and excised, cavity packed with gauze, which was brought out at the lower angle of the wound, remainder being closed with a continuous silk peritoneal suture, a silver mattress muscle suture and a silver subcutaneous suture.

After the operation Dr. Halsted returned to Baltimore, leaving the writer to look after the case. The patient was in good condition, pulse 92. Towards evening the temperature rose slowly, being 101.4° at 5.30, 102.4° at 10 and 103° at 3 a.m. In the meantime the pulse had become

more rapid, reaching 118. Patient was then restless, constantly vomiting small amounts of fluid; the abdomen was distended, tense, but no muscle spasm nor tenderness; pelvic pack draining profusely. During the early morning the temperature fell, but the pulse grew steadily worse, and at noon, July 1st, was 146, temperature 104°, respiration only 28. The abdomen was soft, flat, not tender; evidently no peritonitis present. Strychnia was given hypodermically in doses of 1-60 grain every hour, but had no effect on the pulse, which reached 170. At 4.30 a nutrient enema was given, and at 4.45 700c.c. salt solution was injected under the right breast. The patient continued very thirsty and vomited incessantly. To relieve this the stomach was thoroughly washed out through a tube, with good effect.

At 7 p.m. (July 1st) the boy was rapidly getting weaker; temperature 105.8°, pulse 156, but no signs of general peritonitis were present, and it became evident that the condition was one of general septicemia, and I realized that drastic measures were necessary, and decided to try the effect of venesection and transfusion to wash out the poison in the blood.

Accordingly at 7 p.m., under cocaine, I exposed the right basilic vein, inserted a large aspirator needle and allowed the blood to flow out, but the blood pressure was very weak and we could only obtain about two and one-half ounces. We then began to inject normal salt solution, which had been hastily prepared, using for this purpose a large aspirator; 1300 c.c. (one and one-half quarts) were injected slowly, about one hour being consumed in the operation. During the transfusion the pulse steadily improved and at the end had fallen from 160 to 130, and the volume which was previously almost imperceptible became fairly strong. His temperature fell from 105.8° to 104°, and his general condition was much bettered.

This improvement was very decided for an hour or two after the transfusion; the nausea ceased and he slept a short while, but very soon the pulse began to get more rapid, and at 3 a.m. (July 2nd), was 146 and quite weak in volume; the patient was restless and slightly delirious; the temperature 104°.

It was very evident that the transfusion, while very beneficial, had not been sufficient, although he had received two quarts of fluid (700 c.c. subcutaneously and 1300 c.c. intravenously). Preparations were then made for another transfusion, and at 6.45 a.m. it was begun. 2500 c.c. (two and one-half quarts) of salt solution were used this time and had the effect of apparently completely washing out the blood infection. Temperature and pulse both dropped almost to normal, and after that there was never any great concern about the boy's welfare.

The following special chart, which includes the period of the first submammary and intravenous infusions, shows very graphically the effect of each, especially the last transfusion:

Time.	Amt. of salt solution infused.	Pulse.	Temperature.	REMARKS.
June 30				
a.m.				
10.25		113	100⁴	operation—appendectomy—evacuation large abscess.
11.25		92		operation ended—patient in good condition.
p.m.				
5.30		88	101⁴	doing well.
11.00		104	102	very restless.
July 1				
a.m.				
3.00		118	103	vomiting—abdomen soft, not tender.
noon		146	101	cold sponge—pulse much weaker.
p.m.				
1 30		164		strychnia gr. 1-60 every hour.
4.30		170	105	pulse very weak—patient very restless—condition rapidly getting worse.
4.45	700c.c.			*infusion beneath right breast 1½ pints salt solution.*
5.00	120			120 c.c. salt enema retained.
5.45		156	105⁵	pulse improved by infusion, but fever gradually increasing.
6.30		160	105⁸	condition of patient becoming rapidly worse—pulse very weak.
7.00				operation—exposure of basilic vein; removal of 2½ ounces of blood—*intravenous—infusion 1300 c.c.* (1½ quarts) *of salt solution.*
7.10		156	105⁸	infusion begun.
7.30	600c.c.	148		pulse improving in strength.
8.00	1300c.c.	130	104	pulse full and strong—general condition of patient remarkably improved.
July 2				
a.m.				
1.00		130	104	condition of patient greatly improved since infusion.
2.45		146	104	pulse becoming weaker again—temp. not rising.
4.30		146	103⁸	pulse very weak—patient restless, delirious—preparations made for second intravenous infusion.
6.45		146	103⁸	left basilic vein opened—infusion begun.
6.55	200c.c.	120		pulse slower, but weak.
7.02	600	120		pulse much stronger.
7.08	1000	120	103²	
7.17	1500	116		patient much stronger and now perfectly rational.
7.28	2100	112		patient says he feels "full" all over.
8.10	2500	108	102	pulse very full and strong—general condition greatly improved—complains of "fullness" all over body, 2500 c.c. (2½ quarts) have been introduced—infusion stopped.
9.00				patient has been very quiet since infusion—now sleeping.
9.30				infusions have had a marked diuretic effect, 25 ounces voided in past 12 hours.
11.30		100		
12.00		104	101²	sleeping soundly.
p.m.				
10.00		96	101³	condition fine.
July 3				
a.m.				
6.00		84	101³	pulse strong—general condition good.

NOTE—Subsequent convalescence uneventful.

On July 2 Dr. Halsted returned and removed the skin stitch. It was then found that the infection had travelled up the abdominal incision, and had been so virulent as to cause a slough of the edges of the rectus muscle for five or six inches. This was followed several days later by a wide separation of the edges of abdominal wound, and the thin layer of peritoneum, which had fortunately been sutured separately from the muscle, alone prevented evisceration.

The subsequent convalescence was tedious, but uneventful, the abdominal pack being gradually removed from the sinus finally closing.

CONCLUSIONS.

This case, which has been recited at considerable length, is a striking example of the wonderful therapeutic possibilities of saline infusions.

Of late evidence has been rapidly accumulating showing their great value in acute anemia, uremia, eclampsia, coma, post-operative shock, etc.

In cases of toxemia the rational treatment is certainly to remove by venesection as much of the toxic blood as possible, and replace it by a normal salt solution. One vein may be used for both purposes, or one may be bled while one on the opposite arm is infused.

This simultaneous depletion and infusion makes it possible to withdraw much more of the poisoned blood without fear of shock.

As exemplified by this case, very large amounts of fluid may be necessary before the toxic agent is neutralized or washed out. The first 700 c.c. which was injected beneath the breast reduced the pulse from 170 to 156; but it had no effect on the temperature, which even continued to rise, and the pulse soon became weak again. The next infusion (intravenous) of 1300 c.c. reduced the pulse from 156 to 130, and the temperature from 105° to 104°, but here, again, both soon began to rise, and it was only after the last intravenous infusion of 2500 c.c. both fell never to rise again.

An interesting question is, "How much dilution can the blood stand?" Taking the common estimate, the adult man has between 4000 and 4500 c.c. of blood in his body. Our patient, a delicate boy of fifteen years, probably had very much less, yet he received 4500 c.c. additional fluid into his vascular system without any bad effect.

It would, therefore, seem proper and justifiable in a case of septicemia in the adult to infuse 7000 c.c. or more of salt solution. I feel sure no harm would be caused if it were injected slowly, and at two or more sittings.

It is certain that small amounts—a quart or so—will be utterly useless in many cases. The curative effect is probably due both to the dilution of the poison and its rapid elimination by the excretory organs, brought about by the high artificial vascular tension. (The diuretic effect of infusions is very marked.)

Method of Infusion.—The subcutaneous and submammary methods are probably adequate for cases that are not urgent, but for others the direct infusion into a blood-vessel is certainly much more certain and immediate in its results. The intravenous method, which was most successful in this case, is not without danger on account of the possibility of air and foreign body emboli, and a few cases of death from such causes have been reported. This led Dr. Halsted, in 1884, to advocate centripetal arterial transfusion as being devoid of all danger. The radial artery, Dr. Halsted thinks, can be more easily exposed than a superficial vein in many cases, this being especially true with fat subjects.

All toxic conditions would seem to come within the province of the depletory venesection and saline infusion, not alone the surgical septicemias, but the toxic states of typhoid, pneumonia, diphtheria and malaria, and there is no reason why the procedure should not be repeated as many times as is necessary to combat the blood infection.

In a case of severe malarial coma last summer Dr. Schenck, at my instance, removed thirty ounces of blood, and followed it by an infusion of nearly two quarts of salt solution, with very good effect. The loss of healthy corpuscles is more than compensated for by the removal of parasites, toxines and dead corpuscles.—*Maryland Medical Journal.*

CONGENITAL DISLOCATION OF THE HIP.

Congenital luxations are mostly traumatic. They are found in infants well formed, vigorous and of good constitution, and are rarely found associated with other malformation. It occurs at the moment of birth, or sometimes it occurs within the uterus. The displacement of the femoral head may be found also with arrest of development and multiple malformation; they are also seen in anencephalous cases.

Congenital displacements other than those of the head are very rare.

Any obstacle to delivery, such as malformation of the pelvis or a faulty position of the child or of the head or the child being unusually large, may be the cause of luxation, through the efforts made by the accoucheur.

The hand of the accoucheur, the crochet or the finger placed in the fold of the groin to aid the expulsion may result in dislocation; at the same time the noise of the slipping may be heard.

In pelvic presentations, the thighs being flexed upon the abdomen, the head of the femur is pressed to the posterior and inferior part of the capsule and consequently in that position the application of a minimum of force causing traction downward, is sufficient to displace the head and to carry it beyond the border. Extension of the limb during delivery now completes the displacement, and it is only required that the weight in standing shall be put upon the feet, or that an effort shall be made to walk to cause the head of the femur to be carried up to the external iliac fossa. Shortening of the leg results as the head is carried higher on the ilium and the degree of infirmity is increased. Thus is produced the peculiar rocking and waddling which is characteristic of this luxation. When it exists only on one side the gait is less peculiar and characteristic.

Some think that the dislocation is not truly congenital and hold that it occurs not at birth, but when the child attempts to walk. If the infant falls they think that the luxation is caused thereby, but it does not result in that manner and parents seek to relieve the results of the fall, forgetting that the infant was always more or less lame.

When I published my work on this subject I had seen two cases of congenital luxation with Dr. Tyler Smith. One was a little boy of fifteen months, having a luxation of the left hip, and the other a little girl aged five months, presenting also luxation on the left side. The boy was a well-developed child, and the little girl had a large head. There were no other malformation in these children. In both cases the accouchement had been very long. In the one because of pelvic presentation, and in the other because of the size of the head. In both patients the reduction of the dislocation was easy and did not occur again. It has been proved that children in whom this luxation is found, are often noticeably large. This fact was especially seen in two boys at St. George's Hospital. I had these children admitted to my service, and they both had double congenital luxation of the hips. The one, aged 12 years, was a strong boy, apparently of 14, and the second, aged 14 years, looked like a youth of 16 or 17. These appearances were so decidedly marked that some doubt arose as to the question of age, and

special inquiry was made to verify the facts. In the cases reported by Holmes and cited by me in which there existed a luxation of the right hip, the head of the child was very large; likewise in a case on whom I operated with Dr. De la Cour, and in whom there was a luxation of both hips, the head was enormously large.

In the second series of cases those which occurred during intra-uterine life, I have noticed several cases resulting from accident or a blow; contraction was produced and there followed a luxation or fracture.

Cruveilhier has given a figure of a child, well developed, presenting a luxation of both femurs, having also club-foot and club-hands, and the cotyloid cavities presenting normal development.

In hydrocephalic or anencephalous infants there have been found all all forms of luxations and sub-luxations and muscular contractions of all kinds.

Grawitz reports that in all the cases which he had examined he found not only luxation of the hip, but also club-foot, club-hand, scolicis, visceral ectopia, spina-bifida and other malformations. In this third series the child cannot live.

But in the pathological museums, luxations producing themselves either in the uterus or at the moment of birth, exist alone, or complicated with fractures along with malformations or monstrosities, and the development is either complete or imperfect and irregular, all are arranged as if they were dependent upon one cause; and thus confusion and error is accounted for.

Many of the deformities are wrongly considered as luxations; they are malformations; and some of the cases catalogued in the pathological museums as pathological luxations have nothing in common with this class of affection, but they are the result of morbid processes, especially of arthritis either in the infant or the adult.

In acute arthritis the articulation may be completely disorganized, and the bony tissue, the head and the neck of the femur, may be completely destroyed. In the infant, inflammation of the hip shows itself about one or two months after birth, following a traumatism which occurred at the moment of delivery. The soft parts which surround the joint are at first affected, and soon the epiphysis becomes inflamed and the articulation fills with pus. The head of the femur may then become displaced or entirely destroyed, and deformity results. The head may be hollowed out or flattened, or there may remain simply a stump; such a condition usually results fatally; the results have sometimes been described as congenital luxations.

Likewise, the neck of the femur is so much altered in rickets that instead of the general angle, it forms a right angle with the body and the great trochanter is carried above Nelaton's line. It is not surprising that this condition should often be considered congenital luxation. I saw a case of this nature in consultation. The young girl was four years old, short and stout with considerable lordisis, and the trochanters were much above Nelaton's line. At the same time, the general appearance and gait inclined one to consider the case a congenital hip dislocation, but the femurs were much curved outward and other signs of rickets

were found. The evidence was complete that the situation of the trochanter resulted from rickets rather than from luxation.

One might think, possibly, that the diagnosis of congenital dislocation of the hip is an easy matter. The truth is that it is frequently overlooked.

I saw in consultation a child aged seven, a typical case of congenital hip dislocation; nothing more characteristic could be desired for a case of this kind; the head of the femur was visible in the iliac fossa, the lordisis was strongly marked, there was double flat-foot, the lower extremities were short; the position in standing and the gait were characteristic. My diagnosis, however, not being satisfactory, another consultation was demanded. Sir Wm. Ferguson was asked to join us and we met at Cambridge Terrace the following day. The child was undressed and made to walk about the room. Sir William watched carefully the movements and quietly remarked: "Well, what have we?" Then after examination with care, he said, "Truly, I venture to say that I have never seen a case of this kind."

This child had been considered for two years one of hip disease.

Some weeks after this consultation Mr. Prescott Hewett asked me to see with him a child in Princess Gardens. On arriving, I found the little patient undressed, going up and down the stairway, the parents and Mr. Hewett viewing the movements of the child from behind. She was a little girl of nine years, very fair, large and well-formed. She was, as they informed me, always lame and unable to place her heels on the ground in walking; but she never suffered. From the time when she commenced to walk she had been lame, but her disability had considerably increased during the last year.

It was a case of congenital dislocation of the left hip.

I mention these cases because they were not recognized by two of the most eminent surgeons of the day, and I give their names in order to emphasize the fact that these luxations are commonly overlooked, or not recognized, in nearly all cases.

Further, I wish to point out that the causes producing these luxations are multiple, and that the conditions of the femoral head and that of the acetabulum vary according to the time when the dislocation was produced, and since there are different kinds of congenital displacements of the hip, the treatment ought to vary. For example, when the infant is well developed and theae are no other malformations, the reduction of the luxation can be effected about the second year after birth and this period may be extended to the third or even the fourth year, when they have not been permitted to exercise. Not only can the head of the femur be easily reduced, but it will probably remain in the acetabulum, but after this period the cotyloid cavity fills up, more or less, with fat or with fat and fibrous tissue and the trochanteric muscles commence to retract; so that even if one could bring the femoral head low enough, difficulty would still exist in retaining it in place.

The femoral head in cases of this kind is usually of normal dimensions and covered with cartilage. It remains intact or slightly altered in form up to the age of from 6 to 12 years and even much later. In the case of Mr. Canton the changes were but slightly marked at the age of 22 years;

likewise the cotyloid cavity may preserve its depth, but it will probably be filled with fatty tissue. It is to be observed that in a case where dislocation is produced at the moment of birth, when, on the contrary, the dislocation occurs within the uterus, the acetabulum may be incompletely developed as in the case mentioned by Grawitz in which the cotyloid cavity was not further developed than in a fœtus of the fifth month.

It is important to determine with exactness the time during which the cotyloid cavity can preserve its depth and cartilage and the head of the femur its normal dimensions. In this connection I recall the remarks made by Fournier upon a boy of 16 years who was presented by him to the Anatomical Society, of which at that time Professor Cruveilhier was President.

"The cotyloid cavity," said Fournier, "retains its form except that the external lip is slightly flattened; it preserves also its depth and cartilage. This cavity contains a certain quantity of fat, which fills it almost completely." The new cavity was formed for the head of the femur, and the head itself was slightly flattened, but it had preserved its normal dimensions and was covered with cartilage. There was no trace of the round ligament. Believing that there had been a fall with resulting disability when the child was three years old, M. Broca inquired whether the luxation was congenital or traumatic; and M. Legendre remarked that congenital luxation usually passed unnoticed until the time when the child began to walk or to stand erect, and if there was a fall it was thought that the luxation occurred at that moment. Cruveilhier, continuing the discussion, expressed the opinion that neither the position of the femoral head, nor the state of the cotyloid cavity, nor the absence of the round ligament were sufficiently characteristic and decisive to permit him to say whether the case was one of old traumatic dislocation or one that was congenital.

Also Cruveilhier, who was the best judge of the question, held that in congenital luxation of the hip, even after the 16th year, the cotyloid cavity might preserve its form, its depth, its cartilage, and the femoral head its dimensions and its cartilage.

I have found that the depth of the cotyloid cavity remains normal up to a variable age, even up to the 12th year; and after having assured myself by means of a needle that this is the condition in the case under treatment, I try to replace the head of the femur. If the trochanteric muscles are not yet retracted, the femoral head can be immediately replaced in the cotyloid cavity and it may remain there. When this retraction is present the head of the femur may be brought down to the acetabulum, but it cannot be retained in that position; it becomes displaced when the limb is extended. And these cases result in this way even if extension be indefinitely continued. Consequently, if there is much difficulty in overcoming the force of the retracted muscles, I commence by dividing subcutaneously the trochanteric muscles and the great adductor. It is easy then to recognize the position of the femoral head and to find out with certainty whether it can be made to occupy the cavity of the acetabulum.

Having thus divided these muscles at the place of their insertions, the

head of the femur can then be drawn down and securely fixed with bandages and with weights attached at the knee or the foot. The head of the bone rests thus in place and there is no tendency to displacement, so that in about four weeks one may commence passive movements. In about another fortnight active movements are permitted, the patient lying on a couch when the thigh can be easily flexed and abducted: the patient is supplied with the convenient apparatus and encouraged to move about.

I have treated 52 cases of this kind of dislocation during the last 35 years; 41 were seen in girls and 11 in boys; the dislocation was unilateral in 22 girls and in 5 boys.

I believe that the following observation indicates correctly the manner of treatment which I adopted in the majority of these cases: In April, 1895, with the aid of Mr. Henry Baker and Mr. Bailey, I divided the trochanteric muscles and the great adductor of the left side in a little girl, of good health and development in every other way, aged 12 years; there was no other deformity; I had previously sounded the acetabulum to be certain of its depth. The femoral head was then mobilized and brought down, extension was made on the fourth day when the wound was healed; and the head of the femur was then solidly fixed in the cotyloid cavity, from which there was no tendency to slip. The articulation of the hip was securely bandaged and extension was continued day and night. In about four weeks passive movements were executed and two weeks later active movements were made while the patient lay on the bed. In about three months the child was raised up and permitted to walk. The two extremities were of the same length, and, though there was a partial disability, there was no displacement when walking. In the month of July the child walked firmly and without limp, and when lying down was able to flex completely the thigh upon the abdomen.

When the acetabulum is so much filled up that it is impossible for the femoral head to find its place I have hollowed out with a special gouge as much as I could subcutaneously so as to create a cavity sufficient for the lodgement of the femoral head; but I have never done the operation by open incision after the manner of Professor Lorenz, of Vienna, and Dr. Hoffa, of Wurtzbourg, and I have never experienced difficulty in using the gouge cubcutaneously. However, when obliged to employ these means the movements of the joint are less free and there is a slight tendency to anklyosis.

The operation presents a great advantage when the dislocation is unilateral, or when the movements made on one side are good and the luxation double. When there exists a real consolidation, and when a new joint has been formed, as in the case of Fournier, I have never interfered for this new joint will be sufficiently well formed and sufficiently deep to lodge the femoral head and to permit of free movements, which one might lose through interference. On the other hand, the femoral head can always be brought down after section of the trochanteric muscles, and either simply or after the use of the gouge it can always be placed in the cotyloid cavity without having a tendency to return.

BRODHURST, *Rév. d'Orthopedie, 1896.*

EARLY RECOGNITION OF PARETIC DEMENTIA.

Dr. B. Sachs concludes (*New York Medical Journal*, Vol. lxviii, No. 2) that in the earlier stages of every form of paretic dementia the physical signs arrest attention. Chief among these are, in the order of their importance: (1) The stammering, tremulous speech; (2) the tremor of the facial muscles and of the tongue; (3) the pupillary symptoms; (4) the change in the individual's handwriting; (5) the exaggeration or the absence of the reflexes. The disturbance of speech is unquestionably one of the earliest symptoms, and is so characteristic that one is not infrequently tempted to make the diagnosis of progressive dementia if a patient who has shown some mental change has in addition that peculiar stammering utterance which makes the use of words of many syllables, or of sentences in which there is any alliteration, particularly difficult. Yet it occurs at times in persons whose mental deterioration is of distinctly alcoholic origin.

The tremor of the facial muscles, which occurs only in progressive dementia and in chronic alcoholism, is a symptom of the greatest value. If alcoholism can be excluded, it is unquestionably a grave symptom, and may well support the diagnosis of paretic dementia.

The pupillary symptoms have by many writers been placed first among the physical symptoms In several patients of mine they have not been developed until long after the appearance of the characteristic speech disturbances and of the facial tremor. The typical Argyll Robertson pupil is common enough, and particularly in those forms associated with tabetic symptoms. The complete immobility of the pupils, both to light and during accommodation, is present in a large number of cases, and is often associated with inequality of the pupils and with the history of preceding ocular palsies, all of which occur more commonly in those who have been exposed to syphilitic contagion. The irregular contour of the pupil has been described as occurring in paretics. It is not dependent upon a preceding iritis, is more probably due to defective innervation, and is, by the way, often seen in persons with constitutional syphilis and also in some young and healthy persons.

The changes in the handwriting are of special value, not only as illustrating the tremor of the fingers and of the hand, but as giving the first evidences of that mental dissolution which is most marked in acts which have been performed with the greatest skill. The dropping of letters from words that were written with ease and almost unconsciously, the omission of syllables, the running together of words that should be separated, and the entire failure to punctuate, may be the first signs pointing to serious mental defect. Too much importance should not be attached to the tremor alone, for in other diseases, and particularly in multiple sclerosis, very similar physical disturbance occurs.

The reflexes invite close attention, for, if absent, they may be part of the symptoms of a tabetic process with which progressive dementia is frequently associated. If exaggerated, great care should be taken not to formulate the diagnosis unless a purely neurasthenic condition can be safely excluded.

DIET TREATMENT OF HEADACHE, EPILEPSY AND MENTAL DEPRESSION.

Alexander Haig, M.A., M D., Oxon., F.R.C.P., in *Brain*, summer number, says: "Those headaches associated with an excess of uric acid in the urine are treated by excluding from the diet all fishes, meat, eggs, tea, coffee and cocoa, and giving milk, cheese, pulses, cereal foods and fruit. From the change of diet the nutrition of the patient is lowered, so that the stored reserves of uric acid flood the blood, and, besides, many vegetable foods introduce more alkali and less acid into the body than do the animal foods interdicted, and thus increase the alkalinity of the blood, and flood it with uric acid. For these reasons an increase of headache occurs in the beginning of the treatment. To tide the patient over the period of excessive headache, a mixture of bromide of ammonium and salicylate of ammonium is given. However, this plan of diet is to be persevered in, for the increase of headache, in the beginning of the treatment, when the first rush of uric acid occurs, is to be regarded rather as a favorable than an unfavorable sign.

"In mental depression the same diet is used, and, to conserve the patient's strength and energy, he is put to bed with most happy results.

"In the treatment of epilepsy success was not so well marked, but a thorough trial of treatment is insisted upon before the plan is abandoned. Here, too, an increase in the number of convulsions may occur in the commencement, which, however, is not to be regarded as unfavorable."

ABOUT ERGOT.—For some years we followed the lead of Podwissotsky and assayed ergot extracts for sclerotic or ergotinic acid, as most manufacturers do to-day. We now know as the result of our own experiments upon animals that ergotinic or sclerotic acid is not only not the active principle of ergot, but that it is harmful when injected because it depresses the nerve centers and exerts no hemostatic influence. We have also found that the determination of resin in Cannabis Indica, and extractive in Digitalis, is absolutely useless in so far as it serves as an indication of the activity of these drugs.—*Therapeutic Notes.*

THE PHYSIOLOGICAL EFFECTS OF OVARIAN JUICE.—Ferré and Bestion make a report in the *Therapeutic Gazette* of the effect of a glycerine and water extract of ovary, and find it to possess distinct physiological influence in males and females, and they find that males cannot stand the doses well borne by females. If a large dose be given to a male he becomes intoxicated and dies, and a female requires double this dose to produce death. The symptoms shown by the male consist in progressive hypothermia, the production of sloughs at the point of injection, excitement of the genital apparatus, with erections and ejaculation of semen, and finally tremors and paralysis. Hematuria may develop. They found tubular nephritis, and in the paralyzed animals congestion of the spinal cords, particularly in the area of the spinal center in the lower dorsal and

lumbar region. There were also well advanced lesions in the anterior cornua of the spinal cord. Ferré and Bestion conclude that the juice has a distinct effect, and that the partial immunity of females to this effect is due to the fact that they are accustomed to the ovarian juice in that doses similar to those which cause death in the male will do so in females below puberty who are not accustomed to ovarian activity. They believe that ovarian gland should be cautiously given to women who have passed the climacteric for these reasons.

ERYTHOMELAGIA.—Dr. Rost, Prof. Oswald's assistant at the Augusta Hospital, Berlin, recently presented a case of this rare disease at the *Verein fur Innere Medicin.* As he has been able to find only some 40 cases of it altogether in the literature, each case is of special interest, it aroused a good deal of attention and was carefully observed by most of those present. The opinion expressed by Dr. Rost, which seems to be that generally held by the internists, is that of Dehio: He considers it an independent disease and due to a state of irritation of the cells of the anterior horns at certain levels in the cord. Some time ago a series of articles from Vienna claimed that it was a symptom-complex with intimate relations with such other affections as Raynaud's disease and the neurotic edemas. This view does not seem to meet with much favor in Germany and its independent character as a disease with probably a special functional disturbance at least of definite anatomical elements, is conceded.—*Journal American Medical Association.*

BREWERS' YEAST IN FURUNCULOSIS.—Brocq praised the action of brewers' yeast in furunculosis when presenting a child in one of his lectures, and pointed out the great value of this substance in all suppurating forms of skin disease—impetigo, acne, and especially furunculosis. Properly administered, brewers' yeast would arrest an attack of furunculosis within eight days. The only difficulty encountered was in obtaining fresh yeast, as only this is efficacious. Two or three coffee-spoonfuls are to be taken at the beginning of a meal in a little water. This dose may, however, be increased without bad effects. When brewers' yeast cannot be obtained, compressed yeast may be prescribed, although it is not so well borne. On account of its action on superficial suppurations, brewers' yeast might also be tried in gonorrhea.—*Jour. de Med.*

ICHTHYOL IN ACUTE LARYNGEAL CATARRH.—Cieglewicz obtained brilliant results with ichthyol in acute laryngeal catarrhs. He orders its inhalation in cases of catarrhal laryngitis and the pseudo-croup of children by means of a Richardson's atomizer as a 2 per cent. solution in cold water. The inhalations were practiced, according to the severity of the disease, from three to five minutes at a time, once or twice daily. The patients accustomed themselves easily to the taste and smell. Cough and hoarseness rapidly disappeared. In some cases the effect was so surprising that an attack of coughing was cut short from one inhalation of ichthyol. No bad effects were ever experienced.—*Praeglad Lekarski.*

THE USE AND ABUSE OF PESSARIES.*

BY DR. BYRNE.

MR. PRESIDENT AND GENTLEMEN,—Though this subject is one that may be considered threadbare, it having been discussed so often, yet in spite of that, and of the fact that at an early day after the organization of this Society I took occasion to make some general remarks on the same subject, it is to be deplored that the teaching of the best authorities of the present day, including that of our distinguished friend present, Dr. Skene, and the plain statements and directions laid down for the management of these cases, are every day ignored.

Indeed, I think I have removed a larger number of improperly shaped and ruinous so-called retroversion pessaries during the past three months than I have done in as many years previously. There would seem to be a very general misconception, not only as to the correct form, but also regarding the manner in which a proper pessary affords relief in these cases. Many general practitioners appear to think that it directly supports the uterus; in other words, that the uterine body actually rests on the bar which goes toward the cul-de-sac. Now, we all know that it does not, but simply, by elevating the cul-de-sac of Douglas, and rendering the retrouterine parts more or less tense, the cervix is thereby drawn back, and the uterine body proportionately swung forward and upward. In this manner only does a properly shaped pessary afford relief, provided the uterus be freely movable, and no adhesions or other complications exist. If, however, the uterus is found to be but slightly bound down by adhesions, these should first be carefully stretched or gradually broken up by daily packing the posterior cul-de-sac with numerous small but compact tampons soaked with carbolized glycerin. Even a week of such treatment will often render a case safely manageable by a pessary; whereas, without these preparatory measures, a resort to any mechanical device would be likely to do more harm than good.

It is not my intention, however, on the present occasion, to say anything touching diagnosis, or the principles, much less the details of the treatment of retrodisplacement of the uterus. My prime object is to call the attention of this Society, and through it that of the profession in general, to the frequent employment of a viciously shaped so-called retroversion pessary, by which serious and often irretrievable injury is inflicted.

The average general practitioner, without due reflection as to the mechanism of retroversion and the pelvic structures involved, encounters what he deems to be a case of retroversion, or it may be retroflexion, and yet it sometimes happens that it is neither one nor the other. However, he forthwith applies to an instrument dealer, and the latter individual, assuming the *rôle* of adviser, recommends and furnishes what he, from a commercial standpoint, conceives to be the right thing. As a result, the chances are about even that the very article against the use of which

* Read before the Brooklyn Geological Society.

most gynecologists, as well as myself, have been protesting for years, will be selected. I have brought with me some specimens of these dangerous contrivances which I, and no doubt others here present, have been frequently called upon to remove. It is hardly necessary for me to say that if the case should happen to be one of simple retroversion, and, if the kind of pessary to which I refer be worn for any length of time, a flexion will be the consequence; while, if the latter deformity existed at first, the case will be made worse thereby, if not rendered incurable.

In contrast with these pernicious devices, I here submit some specimens of what we all know to be properly shaped instruments, and the use of which, in suitable cases, and when properly adjusted, rarely fails to afford immediate relief.

And yet, however perfect in form and general outline a pessary may be, the general practitioner should bear in mind that, in size particularly it must be suited to each particular case, and its adjustment effected with due regards to the parts with which it is brought in contact, and with as much care as would be observed in fitting a boot to a tender foot; otherwise it can do no good, but, on the contrary, may be productive of much harm and discomfort to the patient. In this connection I would repeat and emphasize what has been said before: that the manner in which a proper pessary relieves a retroverted uterus is by tightening up the cul-de-sac, and thus drawing back and slightly upward the cervix, while the fundus is proportionately swung forward. So, we do not, nor can we by any safe mechanism, completely restore a retroverted uterus. We simply take away the pressure of the fundus from the rectum, improve the circulation, and thereby, and in various other ways, relieve the patient.

For a more complete and permanent cure, apart from operative measures, as shortening the round ligaments, and ventral fixation, etc., all of doubtful permanent utility, in my opinion, we have to look to pregnancy and parturition as an important means to that end. If, during the period of involution following confinement, and for some time longer, recourse is had to a suitable pessary, a large proportion of these cases may be cured, though in some the occasional return to its use for periods of a week or two will be found necessary and beneficial.

Before closing, and in connection with the act of applying a pessary for retroversion, I must not omit referring to a stereotyped phrase quite often employed in directions for the management of this particular form of displacement, namely, "first replace, or restore the uterus, and then apply the pessary." I am at a loss to understand what is meant to be conveyed by this instruction; because, if, on careful examination, the uterus is found to be freely movable, i.e., the malposition uncomplicated by inflammatory products or adhesions, and, therefore, and not otherwise, in a proper condition for mechanical treatment, the very act of adjusting a suitable pessary restores that uterus as much as any proceeding can. If, for example, a sound in careful hands be passed with its curve reversed, a little beyond the os internum, and pressure is then made on the posterior aspect of the cervical canal, while the sound is gradually rotated in a normal direction, the uterus will now be in nearly a normal position, so long as the sound remains. On its withdrawal, however, the

organ will immediately flop back, nor will the application of any mechanical device serve to maintain it in the nearly normal position to which it was brought by the aid of the sound. Hence, this talk of restoring the uterus first, and then applying the pessary is sheer nonsense.

But, Mr. President, I feel that in these discursive remarks, I have far exceeded my intention at the outset. I am not without hope, however, that through some interchange of views here, to-night, and the publication of our transactions, the general practitioner may be brought to realize the evil consequences likely to follow the use of improper pessaries in cases of retrodisplacement of the uterus.

COLOTOMY AND COLOSTOMY.

Colostomy consists in bringing the descending colon up to the anterior abdominal wall, to which it is stitched, the opening into the lumen being made at once or after an interval, according to circumstances.

The great disadvantage of this operation is that it does not entirely prevent the entry of fæces into the distal part of the bowel, where they tend to set up inflammatory troubles. In colotomy, the gut is cut completely across, the proximal portion brought out of the wound, and the distal closed by sutres and returned to the abdomen. This method is not entirely satisfactory, as the distal end tends to become distended by the accumulation of its own secretion, which may eventually lead to ulceration. Konig and Sonnenburg leave the upper extremity of this portion open and attach the artificial anus to the abdominal wall below, whereby the rectum can, if desired, be irrigated from above. Another means of preventing fæces from getting into the rectum is by the formation of a spur, but the disadvantage of this method and colotomy is that they leave a long and freely movable colon and mesocolon. The best method consists in the ordinary operation of colostomy performed at one sitting, but preceded by partial occlusion of the distal portion of the bowel. A ligature is tied around this, occluding it to about one-half its diameter, and the bulging serous surfaces on either side are sewn together with interrupted stitches. An artificial constriction is thus produced, which prevents the accumulation of fæces in the rectum. In attaching the gut to the belly-wall, first sew the serous and muscular coats of the intestine to the parietal peritoneum, and then pass the ordinary sutures through both bowel and abdominal wall. If, however, this will lead to considerable tension, attach the intestine to the fascia of the external oblique, leaving the skin free, but shutting off the muscular planes from the risk of infection.—MOSETIG-MOORHOF (*Wiener Med. Presse*, No. 3, '98).

A WOUND OF THE PERICARDIUM AND PLEURA—TREATED BY SUTURE.

On the night of January 26, 1898, I received a telegram asking me to visit one of the interior towns of the state and treat a case of wound of the pericardium. On arriving at the bedside of the patient I found a very strong, robust man, aged twenty-eight years, and six feet two inches in height, looking very pale and lying obliquely across the bed, on his back, breathing fifty-six times per minute with pulse of 140 beats per minute. His clothing had not been removed. His chest was in part covered with a sheet, which I removed, revealing a large wound in the left side of the thorax through which the heart could be seen beating violently. With each respiratory movement the heart projected through the wound and air, making a rough blowing noise, rushed into the pleural cavity. The fifth rib was in part gone from the costal cartilage backward a distance of about two inches, and about one and one-half inches of the costal cartilage was gone. Beneath where the rib and cartilage should have been was a wound more than four inches in length, dividing the pericardium and pleura, and through it the apex of the heart protruded. Doctor A. C. Wood had the case in charge, and had devoted his resources mainly to sustaining the patient and protecting the wounded tissue from infection. At the time I made the preceding observations fourteen hours had elapsed since the injury. It was caused by the bursting of a circular saw in a sawmill. The man was running the saw. The left pleural cavity was open, and a ragged wound could be seen and felt in the lower lobe of the left lung. A large quantity of blood had been lost, but there was no bleeding now. We hastened to close the wounds, stitching up the pericardium first. Placing my left index finger on the heart, I pushed that organ backward and downward until I could catch the cut margins of the pericardium with forceps and draw them forward and in contact so I could stitch them together with continued catgut suture. In thrusting the needle through the margins of the pericardium I used my left index finger as a guide to prevent the needle from piercing the walls of the heart. After the pericardium was closed we next sutured the pleura, and after doing that we proceeded to close the rent in the chest wall, using catgut for the purpose. Care was observed to bring all lacerated and cut ends of intercostal and thoracic muscles accurately together, and to hermetically close the thoracic fasciæ and integument with sutures. Almost directly the chest wall was closed and the heart and lung were excluded from the circumambient air, the respiration fell to thirty-four inspirations per minute. The heart also beat more slowly, and it was marked by all observers that the patient appeared better. No anesthetic was used as it was not deemed wise to jeapordize the greatly enfeebled respiratory and circulatory forces. The man appreciated fully the gravity of his wound, and endured the pain incident to the operation with scarcely a murmur. An aseptic dressing of gauze and cotton was applied to the wound and secured by a broad bandage passed around the chest. Some doses of morphine and whiskey had been given him by Doctor

Wood before my arrival; further than this the patient relied wholly upon his own fortitude in enduring the pain. Doctor Wood and I decided to treat the wounds on the principle which commonly serves best in case of serious wounds elsewhere, namely, by vigorous elimination by cathartics. Sulphate of magnesia in saturated solution in tablespoonful doses was commenced directly the operation was completed and the patient made comfortable in bed. The dose was repeated every two hours until a good free movement of the bowels was provoked, then it was continued less frequently. A letter from Doctor Wood ten days after my visit informs me that the patient's bowels are moving sundry times every twenty-four hours, that he has had no temperature above 101°, that pulse and respiration are quite normal and that his appetite and sleep are good.

GLAZED BOOK PAPER BAD FOR THE EYES.

The effect of glazed papers on the eyesight has recently occupied the attention of some German doctors. One authority examines the causes of the changes in the general reading and writing habits of the nation, and explains that in the earlier part of the century the old rag papers then in use, both for writing and printing purposes, were mostly of a dull gray or blue color, and were coarse-grained, so that thick letters had to be used by writers with quill pens or by printers on their old slow presses. With the introduction of more modern fibers, paper received a smoother surface, steel pens could be employed, and the printing paper could travel over quicker printing presses. The fashion for brilliant colors and elaborate typesetting has been carried to such a state of perfection that a reflection is often created which could never arise from the rougher surface. Now, what is the effect upon the reader's eye? In the old books or letters, with a mild and soothing light, the surface contrasted easily from the thicker and darker type or writing characters; now the highly glazed surface offers reflections of the light which, with the more elaborate and thinner type, produce a lot of shades and lights that are most trying to the eye. The paper has often to be turned in various directions to be seen more clearly in order to distinguish the gray (or, may be, other shades) of the type from the shining white of the paper. This is similar in effect as to the result of trying to decipher writing in the dusk. An experiment would soon prove this. Take an old edition, say, of Shakespeare, and a new magazine on highly glazed paper, and compare the sensation in the eye after half an hour's reading. The doctors, therefore, propose that the public inspectors of schools should order the use of sanitary paper for the eyes, by which they mean that a glazed or highly polished surface should be avoided, and the colors chosen should rather be gray or light blue, but no white, and in fact, no brilliant colors at all. The type should be clear and simple, and not too thin. The children, whose eyes require protection, and through them the parents, should be taught to demand their favorite books and papers to be printed in the right style, and the excesses of a falsely guided taste should be avoided. It is suggested that a few years of such policy would soon improve the eyesight.—*Invention.*

TREATMENT OF ANGULAR CURVATURE OF THE SPINE.

Gevaert (*Annales de la Societe Belgede Chirurgie*, No. 4, July 15th, 1898), in a report on the treatment of Pott's curvature, states that the method of rapidly extending the spine is not free from risk. Death may occur under chloroform or from shock; an abscess in connection with the diseased bone may be ruptured into an internal cavity. The treatment may be followed by paralysis of the lower limbs and the bladder; or may result in rapid generalisation of tuberculosis. Extension of the spine and immediate immobilisation are applicable only to curvatures in the dorsal region, especially the middle of the back. Curvatures in the cervical region are best treated by slow and continuous extension, and those in the lumbar region by Sayre's plaster jacket. Cutting operations, such as cuneiform resection and laminectomy, are now, the author states, rejected by most surgeons. The loss of osseous material caused by the breaking down of the bodies of diseased vertebra cannot, it is held, be repaired by new bone. Consequently the treatment by rapid extension is applicable only to recent cases of Pott's disease or those in which the angular projection involves but a small number of vertebræ. It is contraindicated in the case of cachectic children who are troubled with cough, or suffer from abscess or fistula, or who present signs of degeneration of internal organs.

INCREASE OF CANCER IN ENGLAND.

In England four and a half times as many people die now from cancer as half a century ago, and no other disease can show anything like such an immense increase, W. Roger Williams says in *The Lancet*. "Probably no single factor is more potent in determining the outbreak of cancer in the predisposed than high feeding. There can be no doubt that the greed for food manifested by modern communities is altogether out of proportion to their present requirements. Many indications point to the gluttonous consumption of meat, which is such a characteristic feature of this age, as likely to be especially harmful in this respect. Statistics show that the consumption of meat has for many years been increasing by leaps and bounds till it now has reached the amazing total of 131 pounds per head per year, which is more than double what it was half a century ago, when the conditions of life were more compatible with high feeding. When excessive quantities of such highly stimulating forms of nutriment are ingested by persons whose cellular metabolism is defective, it seems probable that there may thus be excited in those parts of the body where vital processes are still active such excessive and disorderly cellular proliferation as may eventuate in cancer. No doubt other factors co-operate, and among these I should be especially inclined to name deficient exercise and probably also deficiency in fresh vegetable food."

RELIEF OF PAROXYSM IN DYSMENORRHEA.

BY W. R. INGE, M.D.

New York County Medical Association. Stated Meeting, April 18th, 1898.
George Tucker Harrison, M.D., President.

Among the many discrasæ feminæ nothing so often presents itself to the physician for amelioration as dysmenorrhea.

To expect a drug to cure a dysmenorrhea due to obstruction of the menstrual flow, caused by a stenosis of the os, is absurd, but to find a woman willing to be satisfied by a mere narration of causes alone, is equally so.

I have made it a rule, when called to a case of dysmenorrhea, to relieve the pain at once, then, at my leisure, I can study out the cause. For all practical purposes dysmenorrhea can be divided into two heads—constitutional and local. Systemic causes arise from a depraved blood-supply, or neurasthenia. Local ones from some abnormality of the uterus, ovaries, or Fallopian tubes. It is extremely difficult sometimes to make a differential diagnosis between these two—indeed, it taxes the utmost skill of the gynæcologist.

It is not the purpose of this paper to discuss that subject. I only propose to devote a few lines to the medical—therapeutical side, and to present a few cases to demonstrate the beneficial effect accruing from the use of some remedies upon this distressing complaint.

CASE I.—Miss H., December 6, 1896; age 32; had suffered for ten years; weight 112 pounds; anemic, no appetite. Upon examination found anteflexion just above os, cervix thin and quite long, bent acutely, made forcible dilation and prescribed rest for two weeks in bed. Made good recovery, but caught cold in April, 1897, and presented herself again for treatment on April 19th. Complained of insomnia, anorexia, and constant "bearing down pains," lasting for forty-eight hours from beginning of menstruation. Showed me "what passed" that day, which proved to be a case of membraneous dysmenorrhea, enough to excite suspicion. It was a large fragment, representing almost the whole interior of uterus, there being three openings in it, the external one and two others for Fallopian tubes. I prescribed chloral, extract hyoscyamus and camphor, which seemed at the time to relieve the spasmodic attacks, but at next period all the above mentioned symptoms reappeared. Gave her cannabis indica with bella-donna and asafetida, to be taken three times daily, beginning three days before contemplated attack. Very little relief obtained. Tried all sorts of antispasmodics and alteratives for the following four or five periods, but with rather poor results, until I happened upon ammonol. "Eureka!" Ten-grain dose was exhibited, followed in half-an-hour by another. Afforded complete relief in less than an hour. Since then she anticipates the dysmenorrhea by taking a tablet, 5 grains, every night for two or three days before expecting the catamenial flow, and 10 grains, two tablets, when flow is established, with complete cessation of former distress and agony.

In six other cases, congestive form, I have administered the remedy with entirely satisfactory results. The benefit accruing from its use appears to be derived from relieving the congestion of the uterus, stimulating that organ to renewed functional activity. Ammonol is not a secret remedy, as so many German products are. It is an ammoniated phenylacetamide of the amido-benzine series. It is quite different from other antipyretics by the chemical combination of ammonia, which gives it a stimulating rather than a depressing action upon the heart, and never leaves evidences of nervous phenomena.

SOME MEDICAL CULLINGS.

TWO RELIABLE REMEDIES COMBINED.

We meet with many cases in practice suffering intensely from pain, where from an idiosyncrasy or some other reason it is not advisable to give morphine or opium by the mouth, or morphine hypodermically, but frequently these very cases take kindly to codeine, and when assisted by antikamnia, its action is all that could be desired.

In the grinding pains which precede and follow labor, and the uterine contractions which often lead to abortion, in tic-douloureux, brachialgia, cardialgia, gastralgia, hepatalgia, nephralgia, and dysmenorrhœa, immediate relief is afforded by the use of this combination, and the relief is not merely temporary and palliative, but in very many cases curative. The most available form in which to exhibit these remedies is in Antikamnia and Codeine Tablets, each containing $4\frac{3}{4}$ grains Antikamnia and $\frac{1}{4}$ grain Sulph. Codeine.

In pulmonary diseases this tablet is worthy of trial. It is a sedative to the respiratory centers in both acute and chronic disorders of the lungs. Cough, in the vast majority of cases, is promptly and lastingly relieved, and often entirely suppressed. In diseases of the respiratory organs, pain and cough are the symptoms which especially call for something to relieve; this combination does this, and in addition controls the violent movements accompanying the cough, and which are so distressing.

THE SENSIBLE TREATMENT OF LA GRIPPE.

The following suggestions for the treatment of La Grippe will not be amiss at this time, when there seems to be a prevalence of it and its allied complaints. The patient is usually seen when the fever is present, as the chill, which occasionally ushers in the disease, has generally passed away. First of all, the bowels should be opened freely by some saline draught. For the severe headache, pain and general soreness, give a five grain Antikamnia Tablet, crushed, taken with a little whiskey, water or wine, or if the pain is very severe, two tablets should be given. Repeat every two or three hours as required. Often a single ten grain dose is followed with almost complete relief. If after the fever has subsided, the pain, muscular soreness and nervousness continue, the most desirable medicine to relieve these and to meet the indication for a tonic, are Anti-

kamnia and Quinine Tablets, each containing 2½ grains Antikamnia and 2½ grains Quinine. One tablet three or four times a day will usually answer every purpose until health is restored. Dr. C. H. Bryce, Editor of *The Southern Clinic*, has found much benefit to result from five grain Antikamnia and Salol Tablets in the stages of pyrexia and muscular painfulness, and Antikamnia and Codeine Tablets are suggested for the relief of all neuroses of the larynx, bronchial as well as the deep-seated coughs, which are so often among the most prominent symptoms. In fact, for the troublesome coughs which so frequently follow or hang on after an attack of influenza, and as a winter remedy in the troublesome conditions of the respiratory tract there is no better relief than one or two Antikamnia and Codeine Tablets slowly dissolved upon the tongue, swallowing the saliva.

DOUCHE IN NASAL CATARRH.

℞ Antikamnia and Codeine, Tablets, No. xxiv.

Sig. :—Dissolve six tablets in a pint of tepid water and use one-third as a douche three times a day. Shake well before using.

BOILS, CARBUNCLES, AND FELONS.

TREATMENT.—The occurrence of suppurative processes should always be regarded as evidence of faulty metabolism, and search should be made to discover and rectify what is wrong. Patients with boils, carbuncles, and felons are never in perfect health, although it is extremely difficult at times to discover the cause on which the trouble depends. Iron is most commonly needed, but quite as often there will be digestive and assimilative difficulties. In the local treatment of the disease, the objects aimed at are, first, the protection of the inflamed area; second, exclusion of the air; third, a slight antiseptic action. To obtain this end the inflamed surface is covered with a thick layer of absorbent cotton, on the centre of which is smeared an ointment of carbolic, ergot, zinc oxide and powdered amyl, made up with an unguent of rose. When pus is present, the skin is left to part spontaneously. The ointment is applied constantly until the carbuncle heals.

In felons, the diachylon, or litharge, ointment, prepared according to the formula of Hebra, is employed; the pain grows less, and the patient's general condition rapidly improves, and the lesion in the finger terminates in a short time in resolution.—L. DUNCAN BULKLEY (*Brit. Med. Jour.*, Oct. 2, '97).

DEATH.

Dr. E. R. Woods, aged 38, died in Galt, Friday, Dec. 30th, after a somewhat protracted illness. The doctor was a very bright man and had a host of friends in the town.

HYSTERIA IN CHILDHOOD.—Bruns has recently published an important monograph upon this somewhat neglected subject. *(Boston Medical and Surgical Journal)*. One of the chief differences between the hysteria of childhood and that of adult life is that the former often presents itself in a monosymptomatic form, as a paralysis, a contracture, or a limited spasm, and that sensory disturbances, especially anæsthesia, and the hysterogenous or hysterophrenic zones are often absent. Paralytic conditions, contractures, astasia-abasia, aphonia, mutism, stammering and obstinate blepharospasm are important symptoms. Symptoms of motor irritation, such as tremor, chorea, grimaces, tics and spasm are not infrequent, and attacks of a psychical nature, delirium, somnambulism, chorea magna and obsessions are also of importance. The commonest sensory disturbance is hyperæsthesia of the joints, but amblyopia and amaurosis are occasionally observed. Boys are as frequently affected as girls. The affection is most commonly seen between the ages of 7 and 14, but it is not rare in children under 6. The severer cases were more frequently seen in children from the country, especially from lonely and distant villages. Poverty and defective training favor the onset of the trouble. The influence of heredity is somewhat exaggerated, but it is important. Direct imitation of alarming symptoms of any disease which may come to the child's notice, together with defective training, plays a very important part. A nervous and hysterical mother may train a child badly, but the bad influence of an alcoholic father must not be ignored. The symptoms are often of psychical origin and are associated with defective volition; all of them may be produced more or less voluntarily but loss of knee-jerk, degenerative atrophy, and similar "organic" symptoms form no part of uncomplicated hysteria; immobile pupils, fever, burns, etc., which have been described as hysterical symptoms, awaken a suspicion of deceit, but are not observed in children. The disregard of anatomical rules (paralysis on the same side as an injury to the head), the fact that the attacks are easily excited and as easily suppressed, the affection of only certain functions of muscles (as in astasia-abasia) point to the psychical origin of the trouble. It is often hard to draw the line between genuine hysterical symptoms and conscious simulation; to the natural tendency of hysterical patients to exaggerate is added the lively imagination of childhood. The prognosis is distinctly better than in hysteria of adults; not only the individual symptoms, but the hysteria itself may be cured. Before the age of six, and after the age of twelve, when the influence of puberty begins to be felt, the prognosis is worse. The longer the symptoms last and the oftener attempts at cure have failed, the less likelihood is there of cure. The question of treatment is very thoroughly considered. Separation from parents and surroundings takes, of course, the first place, but, in addition, special treatment is often necessary. Except for tonic and strengthening treatment, the only forms of treatment that are of advantage are those that affect the child's mind. Judicious neglect is of great advantage, especially in all paroxysmal attacks. Strong faradism and cold douches are of benefit, partly because they are unpleasant to the child, and thus lead him to control his symptoms. These form a part of what Bruns calls the treatment by "sur-

prise," the direct command to "rise up and walk," on which he lays much stress, pushing it even to the point, in some cases, of direct corporal punishment. Suggestion may be of value, but he has not made use of it in the hypnotic state.—*Charlotte Medical Journal.*

EARACHE.—Hinkel (*Buffalo Medical Journal*) summarizes a good article in the following valuable points:—

1. Earache, however slight, may signify disease that, neglected, may terminate in loss of hearing, and even of life itself.

2. Recurring earache in children is almost always associated with lymphoid hypertrophy of the pharynx, and permanent impairment of the function of the ear is prevented only by early surgical treatment of the adenoids.

3. Acute inflammation of the middle ear may be frequently aborted if proper treatment—mostly of a general sedative character—be administered early and with precision.

4. If relief be not obtained by the second day, an expert examination of the ear should be made, and proper surgical treatment applied to relieve intratympanic pressure and possible involvement of the mastoid cells or intracranial structures. Failure at this stage to obtain as exact knowledge as possible of the condition of the middle ear is criminal neglect.

CONVULSIONS, INFANTILE; ETIOLOGY,—Alcoholism on the part of the nurse is a competent cause of convulsions in a breast-fed child; such convulsions are preceded by nervous irritability, general hyperæsthesia, but without gastro-intestinal derangement, elevation of temperature, or pulmonary complication. They are apt to appear in extremely well-nourished children. As regards the fits, they show marked tendency to increase in number and severity. In some instances there may be anuria. Under such circumstances it is necessary to inquire carefully into the habits of the nurse, and to make a change as early as possible.—Meunier (*Jour. de Méd.*, April 25, '98.)—*Sajous' Monthly Cyclop.*

UNUSUAL COUGHS OF CHILDREN.—There are many varieties of coughs which do not proceed from pulmonary complications. Dr. Emil Mayer has recently published a pamphlet dealing with this not generally recognized fact. Some of these coughs which Thomson designates as useless are common both to adults and child, while one or two are peculiar to the age of childhood. These coughs, which are reflex in origin, are often the cause of much thought to the physician, and are by no means easy to diagnose correctly. The hacking night coughs of children fall under this category. According to Dr. MacCoy, of Philadelphia, these coughs are mostly due to naso-pharyngeal obstruction, and the reason that they are only troublesome at night is because when the child is in an erect position during the day, gravity lends its force to facilitating the escape of the secretions from the nasal passages, but at night when the child is lying down this secretion cannot escape by these means, and the cough is brought on by mechanical irritation. Again there is the paroxysmal hacking cough of children described by Dr. Francis Warner of London. This cough occurs in children who, although emaciated and unable to eat, have a normal temperature and the

physical signs of healthy lungs. Dr. Warner attributes this condition not to peripheral irritation, intestinal worms, affection of tonsils or pharynx. but to unbalanced central nerve action, and as his conclusions were based on the examination of 22,000 children in schools, he is in a position qualified to speak with authority. Lastly, there is the hysterical cough which is common alike to adults and children.—(*Pœdiatrics.*)

INFLUENCE OF ALCOHOLISM IN THE FATHER UPON THE LIFE OF THE CHILD.—Anthony (*Centralbl. für Gynäkol.*) mentions a case of a healthy woman who was married at the age of seventeen years to a notorious drunkard, and who had by him, in her nine years of married life, five miserable little children, of whom four died within the first ten days after birth. The fifth one, by great care, was raised to the fourth year, when it also died. After this the woman was separated from her husband. She then married a healthy man, and had by him two children; the elder of whom grew to be four years old, and the younger, at the time of writing, was fourteen days old. Both were in perfect health. This great contrast between the children of different fathers plainly shows, inasmuch as syphilis was not present, that the alcoholism of the father of the first children destroyed their vitality.—*Medical News.*

OPHTHALMIA GRANULOSA.

℞ Guaiacol 1.0
Glycerine 100.0-200.0
D. S.—To be dropped into the eyes.—(*Rev. de Thérap.*)

IMPROVED COD LIVER OIL.

℞ Ol Jecoris asell 100.0
Saccharin 0.4
Ether acetic 2.0
M. D. S.—Two or three coffeespoonfuls daily.—(*Med.-chirurg Rundschau.*)

PIGMENT SPOTS.

℞ Hydrarg bichlorid 0.5
Sacchari 15.0
Ovi Albuminie 0.1
Succ. citr 30.0
Aq. destill 150.0
M. D. S.—To be applied in the morning and allowed to dry.—(*Medic.*)

THE USE AND ABUSE OF NORMAL SALT SOLUTION.

BY J. WESLEY BOVEE, M.D., WASHINGTON, D.C.

The term normal salt solution has been used interchangeably with artificial serum. Various compositions and strengths of the constituent elements of the blood have been used with these terms. According to Kirke's Hand-book of Physiology, salt exists in the blood plasma in the proportion of 5.546 parts per 1,000, and thus 6 per cent. is a good practical formula.

Blood transfusion, dating back to ancient Egyptian history, was the forerunner of the employment of normal salt solution, the change being made because of the inconveniences of the former. Thos. Latta, inspired by the chemical researches of O'Shaughnessy, injected salt solution into the veins of his patients. In 1855, cholera was treated with the intravenous infusion of salt solution. About this time Prof. E. R. Peaslee used it with egg albumen in ovariotomy. In 1879, Bizzozzero and Golgi injected it into the peritoneal cavity for various forms of hæmorrhage, which treatment soon proved unsatisfactory. In 1888, Dastre and Loye studied its action on animals, and the following year recommended it in the treatment of infectious diseases. Of the five different routes through which it is introduced, the intra arterial, suggested by Dawbarn, is considered unsafe in any condition, and its practice is not recommended. The subcutaneous route is the most useful for common application. In emergency work, the intravenous route will often be needed in severe hæmorrhage, and the rectal enema of solution will be found of great advantage in nearly all conditions in which no bowel lesion is to be combatted. In abdominal surgery, the peritoneal cavity will be the site selected, and even in vaginal hysterectomy it has been employed by the author, complete closure of the peritoneum following its introduction with elevated hips.

The physiological action of it is as a powerful stimulant to the cardiac ganglia and the nerve centres. The skin, kidney and intestinal functions are markedly stimulated and some other organs are similarly affected. Osmosis is markedly promoted by it, and as a result of increased arterial tension, the blood supply to the heart muscles is much increased. It has a hemostatic effect when applied locally to raw surfaces, lessening oozing by stimulating and contracting small vessels. Some experimenters have reported its power of increasing the number of red blood corpuscles.

It is eliminated by the skin neutralizing the perspiration and loading it with salt. The kidneys carry away a very large proportion of the amount in the circulation. The lungs remove it freely, crystals of it having been noticed on the lips for days after its use. Autopsies after its use under the skin, have shown a considerable quantity of it in the intestine, demonstrating that this is one of the avenues for its escape.

In general medicine, it has been used in the many forms of poisoning and in a few other diseases. In obstetrical practice, its use has been largely in sepsis, post-partum hæmorrhage and eclampsia. In surgery, it

is used to prevent and reduce shock in severe hæmorrhage and in sepsis, as well as for irrigation purposes. "Lavage of the blood" in sepsis and sapræmia has been largely used. Blood-letting and infusion has been practiced considerably in sepsis and in puerperal eclampsia. In cholera and cholera morbus, it is strongly indicated. Grandin has had excellent success in uræmia by colon irrigation with large quantities. In shock, it should be employed early, on the table preceding or during operation in bad cases, or after operation in milder ones. Severe hæmorrhage is to be treated in the same manner, though only after the hæmorrhage has been checked. Here is the strongest indication for the intravenous route. Large quantities left in the abdominal cavity after celiotomy, in properly selected cases, has a very salutary effect upon the viscera.

It is contraindicated in such blood conditions as hæmophilia, dyscrasias, etc., in active hæmorrhage, in myocarditis, pericardial effusion, atheroma, arterio-sclerosis, cardiac degeneration, thrombosis, etc. Chronic diseases of the lungs, kidneys or liver, especially if malignant, are aggravated by it. The presence of toxins in the blood has been shown to retard its elimination, thus rendering the employment of large quantities at a time inadvisable. It is necessary that the solution be sterile and hot when it reaches the tissues, though when used by the bowel, less care is needed regarding its aseptic condition. Hot solution avoids chills that are dangerous to weak patints. Probably one liter is enough to inject through one puncture of the skin, as localized necrosis and aseptic inflammation have resulted from overdistension of the tissue spaces.

Ordinarily, not more than one ounce per minute should be injected into the tissues or vein. Pulmonary œdema, dyspnœa, headache, vertigo, mental excitement, delirium, hallucinations, severe pain in the left side, with engorgement of the liver and spleen, occur from over distension of the blood vessels with salt solution.

Altogether, it is not a perfectly harmless procedure, as some would have us believe, especially when used promiscuously as to conditions and users.

MALIGNANT TUMORS AND ERYSIPELAS.

The question of the action of erysipelas and other acute infectious processes upon the course of malignant growths, or certainly some forms of them, persists in coming up from time to time, and the number of cases of apparent cure which must be considered well authenticated is steadily increasing. By "well authenticated" we mean cases in which a careful clinical and microscopical history is available. Richardson (in *Annals of Surgery* for December, 1898) reports a case which undoubtedly comes in this category, and which is of further interest from the fact that the infectious process did not have the ordinary symptoms of erysipelas, but was a deeper inflammation with the formation of much pus. The growth was a recurrent small round-celled sarcoma, and was of large size and, as it appeared, inoperable. During the healing of the operation wound infection occurred, and there were severe local and systemic disturbances. After the subsidence of these the tumor began to disappear, and eventu-

ally left no sign of its existence. Such results, even when occurring only once in many cases, must make us think of greater possibilities and stimulate us to investigation, though progress must necessarily be slow on account of the uncertain and unmanageable nature of the agent. Several writers have reported similar experiences often among a series of failures or doubtful results, and the idea seems now pretty firmly fixed that the erysipelatous process, and perhaps some other acute bacterial infections, exercise a powerful and sometimes destructive effect upon the cells which constitute certain malignant new-growths. All observers agree that sarcoma is the form of growth most regularly influenced by such treatment, and that carcinoma is very little and very irregularly affected. As we have noted, our agent is unmanageable and dangerous, and unfortunately, it is most dangerous when most efficacious. The virulent cultures of the erysipelas coccus have given the most satisfactory results as far as the growth is concerned, but in several instances have caused death from their own action. If the explanation of the results in these cases is that the bacteria, by their metabolism, produce certain substances which we may call toxins, fatal to those cells which have assumed an atypical course of growth and form the neoplasm, and thus cause them to disintegrate and be absorbed, we ought to be able to discover some way for the regulation and accurate application of such qualities as these particular organisms possess. If we can do this, we may yet have a very potent weapon against sarcoma, and possibly along similar lines may be able to combat the more dreadful carcinoma. Most experimenters have spoken of the necessity, or at least the usefulness, of making injections of these bacterial agents into or near the growths. If the favorable action of such material is systemic in character, the result ought to be as good, no matter where the injection is made, but if the action is purely local, like a caustic or a local antiseptic, we should reasonably expect only a local result, and consequently no *cure*. Experience has, however, shown that better results have been obtained by local injections, and the explanation probably is that the action is systemic and through the circulation, but that perhaps when used locally the virus has less chance to become attenuated and reaches its objects of attack in a more concentrated form. It is clear that a substance depending upon a more or less coarse local action could have no effect upon a metastasis which might be microscopic, and in the cases of sarcoma reported as cured we are justified from the descriptions, even without proof, in concluding that there were metastases, and that the action of the agent was systemic. The treatment of malignant disease is one of such great importance that we ought carefully to consider everything from scientific sources upon the subject, and, though it is a mistake to be sanguine, we must in connection with this subject rather seek explanations than deny facts. Whether the destructive action of these bacterial poisons upon the cells of malignant growths helps the theory of their parasitic origin is very doubtful.—*Medical Record.*

THE BACTERIA OF THE VAGINA AND THEIR PRACTICAL SIGNIFICANCE.

J. Whitridge Williams concludes a lengthy but interesting article as follows:

1. We agree with Kronig that the vaginal secretion of pregnant women does not contain the usual pyogenic cocci, having found the staphylococcus epidermides albus only twice in 92 cases, but never the streptococcus pyogenes, or the staphylococcus aureus or albus.

2. The discrepancy in the results of the various investigators is due to the technique by which the secretion is obtained.

3. As the vagina does not contain pyogenic cocci, autoinfection with them is impossible; and when they are found in the puerperal uterus, they have been introduced from without.

4. The gonococcus is occasionally found in the vaginal secretion, and during the puerperium may extend from the cervix into the uterus and tubes.

It is possible, but not yet demonstrated, in very rare instances, that the vagina may contain bacteria, which may give rise to sapremia and putrefactive endometritis by autoinfection.

6. Death from puerperal infection is always due to infection from without, and is usually due to neglect of aseptic precautions on the part of the physician and nurse.

7. Puerperal infection is to be avoided by limiting vaginal examinations as much as possible and cultivating external palpation. When vaginal examinations are to be made, the external genitalia should be carefully cleansed and disinfected, and the hands rendered as aspetic as if for a laparotomy. Vaginal douches are not necessary, and are probably harmful!—*American Journal of Obstetrics*, October, 1898.

THE FORCEPS, WITH ACCURATE DIAGNOSIS, A ROTATING AS WELL AS A PULLING INSTRUMENT.

A. N. Collins, M.D., in *The Physican and Surgeon*, September, 1898, writes that in delivery with forceps we desire to do with our instruments what the natural forces fail to do in the necessary time and order, and to do this with the least injury to the soft parts, and with a minimum of force, a knowledge of position becomes of the greatest practical value. Favorable diameters of the head must correspond with the favorable diameters of the varying canal through which it passes. We will but think back to our student days, when this subject was left in a mighty maze, a sort of mental delirium tremens of planes, positions, diameters and synchondroses, which again arose to our minds a mental nightmare as we stood in awe at the bedside of our first patient; robbed thereby of whatever practical common-sense nature had given us, vainly trying to recall what some honored, but over-oratorical, teacher had taught us.

To simplify the subject, I would suggest as an illustration, a flattened

cork in a bottle with a flattened neck, twisted one-fourth round. Let the cork represent the fœtal head, the twisted neck the canal. Seize the cork a few sizes too big for the neck with thin forceps that will sink into it and draw it. We see at a glance how necessary it becomes to rotate it into proper relations with the flattened neck of the bottle, if we are to remove the cork with a minimum of force and lacerating pressure upon the bottle. We also see the necessity of a knowledge of the position of the cork, that we may keep the diameters in proper relation.

In instrumental delivery keep the occipito-frontal diameter of the head always in the longest diameter of the pelvis through which it is passing, if possible. If not possible, owing to other presentations, rotate the resisting parts to the most roomy diameters, but to do this we must have a clear idea of position, the value of the knowledge of which we will for a moment consider.

1. In ease and rapidity of delivery without exhausting the patient, or unduly bruising the child.

2. Prevention of laceration of the perineum. In most cases the forceps are applied with the head well engaged in the superior strait in an oblique position. If a labor pain forces the head downwards, it will rotate, but if pulled from below rotation is imperfect, and the head emerges and presses upon the soft parts in the oblique position, and if the accoucheur be vigorous and unskilled laceration results.

Too rapid delivery, giving the tissues no time to relax. It is a well-known fact, that muscles and tissues rupture when rapidly stretched, that will not when equally stretched slowly.

4. By dilatation beyond its capacity to yield without tearing when normal in elasticity.

PRACTICAL NOTES.

FIRST CARE OF A BABY.—Hanson is one of those who believe that the baby who is started right stands a much better chance to grow up well and strong than if allowed to catch cold or get indigestion within the first few hours of life. He insists upon the following simple rules as being all important: (1) Do not expose the baby after birth to a greater change of temperature than is absolutely necessary. (2) Do not allow attendants to subject him to prolonged exposure while washing, but rub him over with lard (this usually being convenient), and quickly wipe him off and wrap him up warmly. (3) Do not use too fine a thread in tying the cord, and dress the same with dry, sterile dressings. (4) Give nothing but tepid water or some very weak aromatic tea until there is sufficient milk in the mother's breast for the child's requirements. (5) Notice the clothing and see that the abdomen and chest are not constricted thereby.—*Cleveland Med. Gaz.*

TREATMENT OF THE UMBILICAL CORD.—Bastard, in a paper on the effect of baths in the treatment of the umbilical cord of the new-born, makes the following statements: Since 1891 Pinard has abandoned the daily bath of the new-born in his clinic. The author wishing to deter-

mine the advantages of this method, in a statistical way, undertook the comparison of two series of new-born babies, each series consisting of 110 infants, born without instrumental assistance, and each weighing over 3,000 grammes (6.6 pounds). The infants of one series received a daily bath, those of the second were given only one bath, and that immediately after birth. In the infants not receiving a daily bath, the stump of the cord dropped off, on an average in five and four-tenth days; in those bathed daily in seven and four-tenth days. Pathological disturbances, as periumbilical erythema, suppuration, etc., occurred in 6.3 per cent. of the former and in 19 per cent. of the latter.—*Der Kinderarzt.*

Bathing of the New-born in Relation to the Care of the Navel and to Bodily Weight.—By the observation of 400 infants, half of whom were given a daily bath, and the other half not, Czerwenka determined in the first place that the process of mummification of the stump of the umbilical cord was not interfered with by the bath; the stump was thrown off on the seventh day in about 80 per cent. of the children who were bathed, and in about 94 per cent. of those who were not bathed. The author does not consider the dangers of infection by the bath as great as is usually assumed. The mortality due to umbilical infection amounted only to 0.5 per cent. As regards bodily weight, it was found that the average increase in those who were bathed, regardless of the method of feeding, was greater than in those not bathed. Therefore, the author concludes that it is wiser to continue the daily bathing of the new-born.—*Wien. Klin. Wochenschrift.*

Plastic Surgery in the Mastoid Process—Von Mossetig-Moorhof describes, in the *Cbl f. Chir.* of November 19, his method of closing a defect after ablation of a cholesteatoma in the ear, and all danger of recurrence is past. He cuts a tongue-shaped flap below the defect, after freshening the edge between two parallel lines drawn around the edge of the flap. The edges of the defect were detached all around so that they could be lifted with a hook. The flap was then turned back over the defect and the edges of the flap pushed under the raised edge of the defect all around. Four stitches held it in place and the space left by the flap was sutured in a straight line. The exposed under surface of the flap covering the defect cicatrized over in his six cases in two weeks. An extraneous flap might be applied, if desired, to render the operation more cosmetically complete.

Plastic Surgery of the Eyelids.—Professor Angelucci describes the following cases as a typic illustration of his method: After removal of an ulcerated epithelioma requiring the excision of both lids, of the lachrymal gland and of some neoplasmic nodules in the tissues of the orbit, two large flaps were cut, one on the brow and the other on the cheek, extending down to within one centimeter of the angle of the jaw, sliding the flaps together and suturing them with the horizontal median line of the orbit between, the eyebrow on the upper flap a little lower than its normal position. The orbital edge of each flap was sutured to the conjun-

ctiva of the cul-de-sac, except in the internal angle, where it was sutured to the peripheral segment of the bulbar conjunctiva, which had to be detached up to the limbus. The *Rev. Gen. d'Ophthalmologie* for October 31 illustrates the results a couple of months later. The new lids work and wink well, the secretions of the conjunctival sac are sufficent to protect the corneal epithelium, and although the cosmetic results might be better, the important problem of protecting the eye is solved.

SURGICAL TREATMENT OF ULCER OF THE STOMACH.—Berg urges the publication of all cases after having been followed long enough to determine the ultimate results, as the indications are still so uncertain. He describes thirty cases operated on. The first ten were ulcers with infiltration simulating a palpable tumor. His conclusions from the results attained were that pyloroplastics is inferior to gastro-enterostomy, which must occasionally supplement segmentary resection. The exclusion of the pylorus supplemented by gastro-enterostomy, protects best against the danger of progressive infiltration and perforation, when it is impossible to excise it as in certain cases. Seven cases of cicatricial stenosis of the pylorus were treated with gastro-enterostomy (in one case preceded by ineffectual pyloroplastics). The rest were for various benign affections. He warns against attributing serious gastric disturbances to hernia, and advises an exploratory laparotomy when the hernia is operated on. All his cases recovered.—*Nordiskt Med. Arkiv.*, xxxi, 5.

BONAIN'S LOCAL ANESTHESIA.—This process comprises the anesthesia of the external surface of the tympanic membrane with a mixture of phenol, menthol and cocain hydrochlorate, āā 1 gm., or 2 gm. of the phenol to 5 gm., or 1 gm. of the other ingredients. The internal surface of the membrane and the mucosa of the tympanum are anesthetized with two or three drops of a one-tenth solution of cocain instilled by an incision or incisions made in the membrane with a Hartman canula, mounted on a small syringe. The blood flows very little, if at all. His experience includes twenty-eight operations; paracentesis, destruction of synechiæ, mobilization, ablation of the ossicles, total ablation of the tympanum, also for hypertrophied tonsils and tuberculous infiltrations and vegetations of the larynx.—*Rev. Hebd. de Laryng.*, etc., November 26.

COCAIN AND SPARTEIN ANESTHESIA.—Bagot combines spartein with cocain, which obviates the depressing effect of the cocain on the heart, while rendering the anesthesia more lasting. He has a powder prepared beforehand: cocain hydrochlorate .04 gm, and spartein sulphate .05 gm. When ready to use, the powder is dissolved in one or two cubic centimeters of boiled water. As much as eight to twelve centigrams of cocain can thus be injected in fractional injections without accident. In operating on a tumor he injects 1 c.c. of the weaker solution on one side, and waits seven or eight minutes before injecting the other side. He can then commence the operation in a few minutes on the side first injected. If the operation requires over twenty minutes, a third injection can be made which keeps up the anesthesia for three-quarters of an hour.—*Gazette Méd de Liège*, December 1.

PAROXYSMAL HEMIGLOBINURIA.—In a discussion of several cases at the Berlin Medical Society, it was established that exposure to cold, even walking around barefooted in a bed-room, would in certain persons produce an attack of hemiglobinuria. The blood came from the ureters in one case. Avoidance of getting chilled has arrested the affection in certain cases as reported; Ewald observed that he had never derived any benefit from amyl nitrite, which has been recommended for hemoglobinuria.

ANTHRAX ON THE NOSE.—A. Strubell reports a severe case of gangrenous and necrotic anthrax spreading from the tip of the nose, with chills, fever, etc., completely cured with scarcely a scar, by frequent injections of a 3 per cent. solution of carbolic, a total of 400 Parvaz' syringefuls in eighteen days, combined with copious stimulants, warm baths, and hot cataplasms at a temperature of 50 to 55 degrees C., applied locally every ten minutes, night and day. The growth of the anthrax bacillus is checked at 40 degrees and permanently arrested at 42. Cultures from the nose were very virulent, but no bacilli were found in the blood.—*Munich Med. Woch.*, November 29.

ANEURYSMS OF THE ARTERIA ILIO-FEMORALIS.—The *Vienna Klin. Woch.*, of November 24, contains a detailed review of eighty-five cases in literature and a personal case, by F. Sehopf. He concludes: Compression should be attempted in every case if possible. It may cure alone and, if not, it at least prepares the way for a collateral circulation. If an operation is finally required, total extirpation, if practicable, is the safest method to follow. It ensures best against recurrences, promotes the development of the circulation, is no more dangerous than any other method in respect to the wounds and renders rapid recovery possible. The number of total extirpations of all kinds of aneurysms is increasing; according to Delbet's statistics, from 1875 to 1887, 320 aneurysms were treated with ligatures and 63 with total extirpation, or one extirpation to each five ligatures, but from 1887 to 1894 there were 189 ligatures to 76 extirpations, or one to two and a half ligatures.

WOUNDS OF THE HEART.—Professor Rydygier opens up the heart by a horizontal incision starting a little to the right of the sternum, and extending through it and still farther to the left, just above the third rib. The incision is then carried downward, obliquely outward to the left, including the left third, fourth and fifth ribs. The periosteum is then cautiously detached from the sternum, and the bones sawed. The triangular flap thus made is carefully raised, keeping close to the bones and detaching the muscles. The heart is thus amply exposed, while there is no danger of injuring the pleura or pericardium, and the liability of foam production is reduced to the minimum. Riedel states that in one case the air getting into the pericardium with the blood from the wound churned the blood into foam by the heart action, until it poured down over the whole chest wall. Rydygier's flap has only been tested on the cadaver.—*Vienna klin. Woch.*, November 24.

NEW SYMPTOMS OF MEASLES.—Meunier has noted a marked loss of weight in persons during the incubating stage of measles, when there are no symptoms as yet to indicate the disease. It is noticeable four or five days after contagion and amounts on an average to 300 or 50 grams a day in child of one to four years. It may even attain 790 grams. This progressive loss of weight continues several days and seems to be independent of the age, or severity of the affection afterward. He suggests that it may prove important in indicating and isolating the disease in schools, etc.—*Gaz. hebd. de Méd.*, 89.

FORMULÆ FOR CUTICOLOR OINTMENTS AND PASTES.—Rausch has been devoting much time to studying the best combinations for this purpose and testing them. He recommends the following formulæ, all for external use. The ichthyol preparations are adapted whenever an enemic and vaso-constricting effect is desired. Sublimate can be added at will, without affecting the color. 1. Cuticolor zinc ointment: Armenian red bole .03 gm., glycerin 6 drops, zinc ointment to 10 gm. 2. Una's zinc paste: Armenian bole .24 gm., glycerine 20 drops, eosin (1 to 500), 8 drops, zinc paste 40 gm. 3. Una's zinc sulphate paste: Armenian bole .24 gm., glycerin 20 drops, eosin (1 to 500) drops, paste of zinc sulphate 40 gms. 4. Una's ichthyolized zinc paste: ichthyol, 1 per cent; zinc paste 30 gm., eosin (1 to 500) 16 drops. 5. Ichthyol, 2 per cent.; zinc paste 40 gm., eosin (1 to 500), 20 drops. 6. Ichthyol, 3 per cent.; zinc paste 40 gms., eosin (1 to 500), 22 drops. 7 Ichthyol, 4 per cent.; zinc paste 40 gm., eosin (1 to 500), 40 drops. 8. Ichthyol, 5 per cent; zinc paste 40 gm.; eosin (1 to 100) 12 drops. Cuticolor gelanthum: Armenian bole .02 gm., eosin (1 to 500) 2 drops; zinc oxid 4 gm., glycerin 3 gm., gelanthum 20 gm.—*Journ. de Méd de Paris*, November 27.

SANGUINOFORM.—C. S. Engel of Berlin has applied to therapeutics the physiologic fact that the red-blood corpuscles in the embryo of mammals are nucleated and peculiarly rich in hemoglobin. He procures the embryo of the pig in large quantities, fresh from the slaughter-houses, and produces a powder from the blood-forming organs, desiccated and pulverized, with two parts sacch. lact.; a trifle ol. menth. pip., and for some cases, 2 per cent. ferrum oxydatum. This is administered, per os, three times a day, each dose, from what can be taken up on the point of a knife to half a teaspoonful. He is much gratified at the results attained, which correspond to the theoretic assumption of the value of this treatment with physiologic hemoglobin. In a boy of 7 years, the specific gravity of the blood rose from 1046 to 1057; the hemoglobin increased rapidly from 40 to 60, and finally to 75 per cent., in the course of two and a half months. His investigations were made on ten subjects, mostly chlorotic girls, and every two or three weeks the blood was carefully tested for its specific gravity, alkalinity, amount of hemoglobin, proportion of red and white corpuscles, blood plates, etc. His communication in the *Deutsche Med. Woch.* of November 24 is a theoretic and practical study of our present knowledge of the subject.

SOME MEDICAL CULLINGS

Two Reliable Remedies Combined

We meet with many cases in practice suffering intensely from pain, where from an idiosyncrasy or some other reason it is not advisable to give morphine or opium by the mouth, or morphine hypodermically, but frequently these very cases take kindly to codeine, and when assisted by antikamnia, its action is all that could be desired.

In the grinding pains which precede and follow labor, and the uterine contractions which often lead to abortion, in tic-douloureux, brachialgia, cardialgia, gastralgia, hepatalgia, nephralgia and dysmenorrhœa, immediate relief is afforded by the use of this combination, and the relief is not merely temporary and palliative, but in very many cases curative. The most available form in which to exhibit these remedies is in Antikamnia and Codeine Tablets, each containing 4½ grains Antikamnia and ¼ grain Sulph. Codeine.

In pulmonary diseases this tablet is worthy of trial. It is a sedative to the respiratory centers in both acute and chronic disorders of the lungs. Cough, in the vast majority of cases, is promptly and lastingly relieved, and often entirely suppressed. In diseases of the respiratory organs, pain and cough are the symptoms which especially call for something to relieve; this combination does this, and in addition controls the violent movements accompanying the cough, and which are so distressing.

The Sensible Treatment of La Grippe

The following suggestions for the treatment of La Grippe will not be amiss at this time when there seems to be a prevalence of it and its allied complaints. The patient is usually seen when the fever is present, as the chill, which occasionally ushers in the disease, has generally passed away. First of all, the bowels should be opened freely by some saline draught. For the severe headache, pain and general soreness, give a five grain Antikamnia Tablet, crushed, taken with a little whiskey, water or wine, or if the pain is very severe, two tablets should be given. Repeat every two or three hours as required. Often a single ten grain dose is followed with almost complete relief. If after the fever has subsided, the pain, muscular soreness and nervousness continue, the most desirable medicine to relieve these and to meet the indication for a tonic, are Antikamnia and Quinine Tablets, each containing 2½ grains Antikamnia and 2½ grains Quinine. One tablet three or four times a day will usually answer every purpose until health is restored. Dr. C. A. Bryce, Editor of "*The Southern Clinic*," has found much benefit to result from five grain Antikamnia and Salol Tablets in the stages of pyrexia and muscular painfulness, and Antikamnia and Codeine Tablets are suggested for the relief of all neuroses of the larynx, bronchial as well as the deep seated coughs, which are so often among the most prominent symptoms. In fact, for the troublesome coughs which so frequently follow or hang on after an attack of Influenza, and as a winter remedy in the troublesome conditions of the respiratory tract there is no better relief than one or two Antikamnia and Codeine Tablets slowly dissolved upon the tongue, swallowing the saliva.

Douche in Nasal Catarrh

℞ Antikamnia and Codeine Tablets, No. xxiv.

Sig.:—Dissolve six tablets in a pint of tepid water and use one-third as a douche three times a day. Shake well before using.

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Editorial.

SANATORIA IN TREATMENT OF TUBERCULAR PULMONARY PHTHISIS.

Sanatoria for the treatment of tubercular pulmonary phthisis are now practically in the list of therapeutic agents. As affording isolation, they constitute at the same time, of course, very valuable prophylactics.

That this disease is in a measure infectious, cannot now be reasonably doubted. Whether the tubercule bacillus be the primary factor in the causation, or whether it be, as some authorities contend, *post hoc*, it seems clear that it may become so virulent as to be practically an infective agent and give rise to the disease in predisposed persons, especially in cases of advanced tuberculosis and in confined rooms. Isolation, therefore, of all such cases, with special care in disinfection, becomes of the utmost importance.

The medical profession is always ready to lead, as in fact it usually does lead, in all preventive measures. But having led to a start, and an understanding of the necessity for such measures, the much more interested general public must deal with this part of the subject, and provide the wherewithal to carry them into effect.

The subject of cure, or even of checking the progress of the disease, involves, too, a large measure of prevention. In order to treat this disease most successfully, advantage must be taken of every possible means which

tends to the removal, or lessening the effects, of all causes which favor the progress of the disease, as well as, on the other hand, of all remedies which are known to promote improvement in the general condition of the patient, ameliorate troublesome symptoms, or assist in any way in checking the progress of the disease, or even afford fair hope of so doing.

After the address of Mr. Lawson Tait at the meeting in Montreal, a few years ago, of the Canadian Medical Association, he was asked by a member to what he attributed his remarkable success as an operator. His reply was, in effect, that he attributed it to the exercise of the utmost care in every detail, and taking advantage of everything, apparently the most trifling, which was likely to promote the welfare of the patient. This principle is as applicable to medicine as to surgery. And in no other disease is it of so great importance, perhaps, as in tubercular pulmonary phthisis. Advantage must be taken of everything that is at all likely to help us.

In a large majority of phthisical cases, as we all know too well, to our loss, and to the vastly greater loss of the patients and their friends, it is quite impossible to have either prescribed or proscribed lines of treatment or management carried out while the patient remains at home, or indeed, outside of a special sanatorium. Nearly all such patients require to be almost constantly,—daily and hourly, under the eyes of the physician or a competent nurse; require to be constantly watched to be kept out of the proscribed and in the prescribed course. Hence with special institutions we might hope for a much larger proportion of cures.

Sanatoria are somewhat costly therapeutic agents. But when their benefits as preventives, too, are taken into consideration—when the old and well-known adage, suggestive of a multiple of twenty in their favor, with its infallibility in practice, it is at once seen that they more than make up for their costliness. Moreover, it is in the main only the first cost. With proper management, it is quite possible to keep a large number of patients in a sanatorium about as cheaply as they can be kept individually at home.

In organizing the movement, which it now seems clear will be a successful one, to construct near Toronto a Citizens' Sanatorium for Consumptives, on the most liberal principles possible—for receiving even the poorest patients regardless of their ability or inability to pay for residence, and in all stages of the disease, the citizens of Toronto are, it appears, taking the lead on this continent. A large institution of this character recently established in Chicago, comes nearest to this in liberality in respect to poor patients. And movements are now on foot in a number of cities in both the United States and Europe to construct similar ones. It is only during the last few months, however, indeed, since the project was inaugurated here in June last and the CANADA LANCET first gave an account of its aims and scope, that there has been any reports in our European exchanges of the many similar actions in cities on the other side of the Atlantic. Movements there now in this behalf are becoming quite numerous. It does not appear, however, that it is generally proposed that the sanatoria shall be open to all classes of patients, including those unable to pay and in all stages of the disease, as in the case of this one in Toronto.

A "National Association" for the prevention of tuberculosis was organized in London in July last, the principal object of which is the dissemination of information and for encouraging the construction of sanatoria by the citizens of the larger centres of population. Sir William Broadbent is chairman of the Executive Committee of this Association, and Mr. Malcolm Morris hon. treasurer. Sir Samuel Wilks, Sir William MacCormac and other eminent London physicians are members of the Executive Committee. A meeting was held at Marlborough House, under the presidency of the Prince of Wales, on December the 20th, at which the Prince of Wales, the Marquis of Salisbury and Earl of Roseberry gave addresses to promote the objects of this most benevolent Association, which has already been of much assistance in aiding cities in their efforts to start sanatoria, notably at York. There is a similar association in France and one in Belgium, doing good work in the same line.

Again, as indicative of the progressive and scientific spirit in this city, in respect to the proposed sanatorium here, it is intended, it appears, to make it an exceptionally model one, especially in its appliances for treatment, with features not yet found in any one institution of the kind. One principal feature, probably, will be, we understand, to as it were intensify the now universally recognized "out-door treatment," by a sort of super-respiration and super-oxidized or ozonized air. Another feature is the provision for all patients to continue under the immediate care or charge of their own physician, or so far as this is mutually desired by patient and physician, which is often of much benefit to the patient.

We make free to suggest that other Canadian cities, even the smaller ones, take up this subject and follow the example of Toronto. Every city should have a well-equipped sanatorium, under the control of its citizens, for its consumptives. A movement started by a few of the leading physicians in each of the various cities would, doubtless, be at once encouraged and assisted by leading citizens generally, as was the case in Toronto, and the great need of such an institution could be made so apparent that the project would eventually be carried to a successful issue.

It is to be hoped that the "National Association" in Canada—a semi-private organization—will rather take pattern from that in England, and not again attempt to obstruct any such movement, as it has done, most unfortunately for itself, in this city.

In Toronto, after a small preliminary meeting of a few persons, in June, a public meeting was convened. At this, a large and representative committee was appointed. This was afterwards increased at another meeting to about four hundred, representing every class and important interest in the city, and nominations were then made for a board of twenty trustees,—ten physicians and ten others, and a president, the Mayor of the city, Mr. John Shaw, two vice-presidents and an honorary treasurer were elected; these four to be ex-officio members of the board; thus making this twenty-four in number. To the Committee of 400, ballot papers were sent, returnable in one week, for the election of the twenty trustees. Eighty-four ballots were returned; a very good

proportion, it was thought, more than half being by citizens who were not physicians, thus showing a decided general public interest, outside of the profession. The trustees then elected an executive of seven members.

For a smaller city, probably a board of ten or twelve, and an executive of four or five would be better. Any further information respecting the organization here would, doubtless, be cheerfully furnished on request by the General Secretary, Dr. Playter, of Toronto.

Before concluding, we desire to draw the attention of municipal authorities to the fact that, it cannot be long before they will be required themselves to make provision for the isolation and treatment of consumptives, as well as for other forms of infectious disease, as at present; consumption being much more fatal and generally prevalent.

Already in Edinburgh, the "Convener of the Public Health Committee of the Town Council" is reported to have said the other day that this very question cannot be delayed. There is a "strong feeling" there, we are told, "in favor of making consumption a notifiable disease." And "the trend of opinion is undoubtedly in the direction of the Municipal Corporation providing hospital accommodation for consumption."

When this comes about, the municipal corporations will not then be able to count on assistance,—donations, etc., from charitable individuals, and the cost to the taxpayers will be quadrupled as compared with what it would be in the case of a simple grant of a small sum to assist those philanthropists who propose with such aid to construct a sanatorium, and this just as much under the control of the citizens, indeed, apparently more so, than if built and operated by the corporation, and at many times over more cost, both in building and operating.

[We regret that for the selection on page 859 of the December issue of LANCET, credit was not given to the New York *Medical Journal*, as should have been done.—ED.]

CHEAP DEGREES.

Dear Editor of LANCET,—

We notice in *Globe* of Toronto, Dec. 3rd, the advertisement under *Medical* heading. "*How become lawful Physicians, Dentists, Education, Graduation, other sciences, Lock Box 500, Chicago.*" Noticing some few months ago in a Buffalo newspaper a similar advertisement we, although the possessor of three M.D. degrees, &c., thoroughly lawful, for fun wrote to *Box 500* to send us full particulars, *for we had been through the 3rd book and had studied medicine for six months and wanted M.D. at once.* The *Western University*, the People's Institute, corner Leavitt and Van Buren Sts., Chicago, replied agreeably.

The Western is incorporated, so was or is the Wisconsin Eclectic Medical College, of which at Chicago, on Congress St., Fred Kirkland, M.D., invited the public to get its degree, M.D., (exposed in full, page 266,

CAN. LANCET, January, 1897). J. H. Randall, Ph.D., M.D., is President and Chancellor of *Western*. Besides giving M.D. one has a choice to get *Bachelor*, *Master* or *Doctor* in some forty or forty-five departments.

The *National University*, of Chicago, of which Harkins is President, grants three grades in 45 departments, and Harkins states that many Chicago divines are possessors of National University degrees.

We urge readers of THE LANCET to address *Box 500* and thus they will learn how *cheap degrees*, M.A., LL.D., D.D., &c., for example, are procured by our ministers the Rev. Drs. in several instances.

National, *Western* and Central University (537 E. Vermont St., Indianapolis,) are flooding the U.S. and Canada—yes, England, with degrees.

Will some one, either through our medical journals or newspapers, assist in exposing such concerns to proper insight.

Yours truly,

Nusgnam, Dec. 5th, 1898. MEDICUS.

THE PATHOLOGICAL SOCIETY OF TORONTO.

TORONTO, December 30th 1898.

PROGRAMME.

1. Malig ant Disease of the Aesophagus.....H. A. BRUCE.
2. A Case of Hypertrophic Cirrhosis of the Liver.....J. E. GRAHAM.
3. A Case of Cirrhosis (Fatty) of the Liver .....H. B. ANDERSON.
4. Intestinal Diverticula.....JOHN CAVEN.
5. Ulcerative Endocarditis Affecting Tricuspid and Mitral Valves.....A. W. McPHEDRAN AND R. D. RUDOLF.
6. Situs Inversus—A Specimen.....W. F. G. WISHART.
7. Multiple Intussusceptions of the Ileum.....H. H. OLDRIGHT.
8. Fibrinous Effusion into Subdural Space .....A. PRIMROSE.
9. Accessory Right Bronchus in a Sheep.....J. T. FOTHERINGHAM.
10. Eustrongylus Gigas—in Kidney of Mink.....F. N. G. STARR.
11. Skiagraph—Gunshot Wound of Foot—Specim n from Fatal Gunshot Wound.....G. SILVERTHORN.
12. Rodent Ulcer at Edge of Orbit.....WM. OLDRIGHT.
13. "*a*" Cerebral Softening following Injury .....
    "*b*" Pachymeningitis Hemorrhagica Interna .....
    "*c*." Ruptured Uterus .....
    "*d*." Fractured Pelvis .....
    H. B. ANDERSON.
14. Fibroma Uteri, with Hemorrhages from Twist of Pedicle I. H. CAMERON AND J. T. FOTHERINGHAM.

J. T. FOTHERINGHAM, *Corresponding Secretary.*

DIET TABLE.

BRIGHT'S DISEASE.

FISH.

Raw oysters, raw clams, fresh fish.

MEATS.

Beef, mutton, chicken game, salads.

BREAD AND FARINACEOUS ARTICLES.

Good bread, hominy, wheaten grits, rice, toast, oatmeal, gruel.

VEGETABLES.

Green vegetables generally, spinach, summer cabbage, turnip tops, water-cresses, lettuce, mushrooms, celery.

DESSERTS.

Rice and milk puddings.

FRUITS.

All laxative fruits.

LIQUIDS.

Water abundantly, Poland, Buffalo Lithia, or Vichy water, hot water, milk, skimmed milk, buttermilk.

AVOID.

Soups, fried fish, cooked oysters, pork, corned beef, veal, hashes, stews, turkey, heavy bread, batter cakes, potatoes, gravies, lamb, peas, beans.

All made dishes, puddings (except as allowed above), pies, cake, ice-cream, all saccharine dishes and starchy foods, except as allowed. All spices and highly seasoned dishes. Alcoholic drinks, malt liquors, coffee, tobacco.

CHOLERA INFANTUM.

Scraped beef or mutton.

Mutton and chicken broth, barley, gruel prepared by long boiling, sago, tapioca.

Flour ball: Wheat flour closely packed in a bag, boiled five days, then grated and sifted, and given with boiled milk. Arrowroot and barley flour may be prepared and given in same way.

White of egg and water, expressed juice of meat for infants above the age of six months, whey, brandy.

Pure water abundantly, fresh-boiled milk, plain soda or Vichy water.

In some cases avoid milk entirely; use rice-water. Feed at regular and long intervals as possible (two to six hours), according to age. Give small quantities. Always use stimulants freely.

AVOID.

Milk, except that which has been sterilized or boiled, and starchy substances, except as allowed, and unless the starch has been changed into dextrin by the action of dry heat.

Saunders.

FORMULA FOR BRONCHITIS.

℞ Tincturæ belladonnæ foliorum.....f℥ss
Acidi hydrocyanici diluti.....♏xxiv
Syrupi ipecacuanhæ.....f℥ij
Spiritus chloroformi.....f℥ij
Potassii citratis.....℥ij
Syrupi lactucarii.....f℥j
Aquæ.....q. s. ad f℥iij
Misce.

Sig.—Teaspoonful in water every two hours.

Indication.—Used in early stage with excessive cough.

℞ Codeinæ.....gr. ij
Ammonii chloridi.....℥ij
Ammonii bromidi.....℥j
Antimonii et potassii tartratis.....gr. j
Olei anisi.....gtt. ij
Extracti glycyrrhizæ.....℥j
Tragacanthæ.....gr. xij
Misce et fiant trochisci No. xxiv.

Sig.—One lozenge every four hours.

Indication.—Used during subacute stage to liquify secretion.

℞ Hydrargyri chloridi mitis.....gr. j
Sacchari lactis.....gr. x
Alcohol.....q.s.
Misce. Fiant tabellæ triturationes No. vi.

Sig.—One tablet every hour.

Indication.—Initial treatment in early stage.

℞ Syrupi ipecacuanhæ.....f℥iv
Potassii citratis.....℥ij
Syrupi limonis.....f℥iv
Aquæ.....q. s. ad f℥iij
Misce.

Sig.—Teaspoonful every four hours.

Indication.—Used in early stage to establish secretion.

℞ Codeinæ sulphatis.....gr. vj
Syrupi ipecacuanhæ.....f℥ij
Spiritus ætheris nitrosi.....f℥ij
Syrupi limonis.....f℥iv
Liquoris potassii citratis.....q. s. ad f℥iij
Misce.

Sig.—Teaspoonful every two or three hours.

Indication.—In early stage with excessive cough.

—*Lea Bros. Book of Formula.*

HYDROCEPHALUS, ACQUIRED.

ETIOLOGY.—It is probable that the most frequent causes of obstruction in cases of chronic hydrocephalus are simple fibrous closure of the foramen of Magendie, adhesion of the surfaces of the tonsils of the cerebellum to each other and to the margin of the fourth ventricle, and the presence of cysts between the arachnoid and pia at the postero-inferior aspect of the cerebellum.

TREATMENT.—A case of acquired hydrocephalus was operated on and drainage established through the fourth ventricle. The trephine was applied to the occipital bone in the mesial line a little above the foramen magnum; although the skull is particularly thick at this point, and the sinus in the falx cerebelli requires to be ligated, this is the easiest and most satisfactory approach to the fourth ventricle. The accumulation of cerebrospinal fluid in this case was due to adhesions between the two tonsils of the cerebellum and the sides of the medulla, the separation of which was followed by the escape of the imprisoned fluid. In the subsequent course of the case a large quantity of cerebrospinal fluid escaped daily from the wound. The operation is one that should be given trial in cases of chronic basic meningitis of both the tuberculous and non-tuberculous varieties. Bruce and Stiles (*Scottish Med. and Surg. Jour., March, '98,*)

ABDOMINAL SECTION.—Intestinal paralysis or obstruction is more often the cause of fatal sepsis, either wholly or in part, than *vice versa,* in many cases the septic matter finding its way through the stretched intestinal walls. Exposure of the peritoneum, handling of the viscera, production of raw surfaces, and leaving dead matter (bloody oozing and *débris*) are followed by intestinal adhesions in from 12 to 36 hours, and these adhesions produce more or less intestinal paralysis and sometimes obstruction. On the day before a peritoneal section, the patient should be purged sufficiently to reduce the gaseous distension of the intestinal coils (that they may be kept out of the way during the operation), obtaining as many as six or eight large stools, while patients of relaxed fibre should receive full doses of strychnine from the time they come under observation. Two hours before the operation 2 teaspoonfuls of the fluid extract of cascara are given. Immediately on awaking from the anæsthetic the patient receives a drachm of magnesium sulphate every hour; at the end of six hours a stimulating enema is administered and repeated till gas passes between enemas; then the saline is discontinued. In simple operations where undue haste is not necessary the salines and enemas are given a little later. The author presents as presumptive proof of the value of this method a record of 105 consecutive recoveries after peritoneal sections since its adoption.—H. T. Byford, *Amer. Jour. of Obstet.,* July 1, '98.

SUBSTITUTIONS IN PRESCRIPTIONS.—We have been much amused at the lengthy and forceful editorials in exchanges with reference to the pernicious habit of some pharmacists who have not the article prescribed in stock, but have something "just as good," or "even better," which they substitute. There is no pharmacist so obtuse as not to know that the change of any article in a prescription without the full consent of the prescriber is cheating. "I asked for bread and you give me a stone." What is the use of moralizing with intentionally dishonest people? Nothing can be done with such cheats except the force of the law. This writing all round a subject has no effect; let the guilty parties be exposed, and thus be brought to the bar of public disgust

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OVARIAN SERUM THERAPY.—By experiments upon animals Ferré and Bestion find that ovarian extract is less toxic in its action upon normal females than upon males or pregnant or castrated females or young females in whom the ovaries have not begun to functionate. In healthy adult females a tolerance seems to have been established. The authors call attention, in view of these observations, to the advisability of administering ovarian extract with caution to pregnant women and those in whom a natural or artificial menopause has occurred. Bestion de Camboulas has noted improvement under this treatment in four cases of troubles following castration, and in cases of chlorosis with amenorrhea the menses reappeared and the general condition was greatly ameliorated. Etienne and J. Demange believe that chlorosis is due to insufficient ovarian secretion, and so consider the administration of ovarian extract logical treatment. Seventeen clinical cases observed appear to bear out this opinion. As some other organic substances seem to relieve chlorosis, it is possible that they might be substituted. A. Gilbert and P. Carnot have found ovarian extract efficacious for troubles following castration, and somewhat less so after castration, rarely after genital affections. Its value in chlorosis is considered unproved.

DANGERS OF LUMBAR PUNCTURE.—The usually harmless lumbar puncture may lead to fatal results in persons with abnormal cerebral vascularization, the same as a cranial injury on a normal person produces a bulbar shock for a moment, which soon passes away, while the same shock in a pathologic condition may entail the most serious consequences. *Le Lyon Med.* reports the case of a syphilitic with abrupt, complete paraplegia, resisting all treatment for two years, when Jaboulay resolved to try lumbar puncture. Ether; 20 c.c., of a clear fluid escaped, and 10 c.c. of a 5 per cent solution of iodin were injected. While the patient was still half drowsy from the anesthetic, the respiration suddenly ceased, although the heart and pulse were beating regularly and there was no marked cyanosis. In spite of artificial respiration, traction of the tongue, etc., it was impossible to re-establish normal respiration, although the heart and pulse action continued normally for over an hour and did not finally cease for an hour and a half. The necropsy disclosed generalized syphilitic myelitis, with a softened focus in the left brain, no alteration noted in the medulla, liver or heart, but multiple syphilitic gummata in the right kidney.—*Presse Med*, November 19.

TOOTHACHE:

℞ Carbolic Acid.....2 drachms.
Menthol (Crystals).....½ drachm.
Camphor Gum.....2 drachms.
Morphine.....20 grains.

M. Clean the tooth out with a small wad of cotton, then wet a small wad of cotton with the mixture, force it down into the bottom of the cavity, and fill the same with dry cotton. Pain ceases in a few minutes, and if the cavity is kept packed with raw cotton, changing it every two or three days for three weeks, it will kill the nerve.—BRODNAX, in *Medical Brief.*

RADICAL CURE OF MAL PERFORANS.—Chipault has cured twelve out of fourteen cases by stretching the nerve, followed by cleaning out the ulceration, removing all necrotic bone and horny edges, concluding with an aseptic bandage. All were cured, but two relapsed (four months to three years). The nerve should be stretched not too far from the spot, and still not too near. Nine times it was the nervi plant. int. and ext.; once the plant. int. alone; once the collateralis int. of the great toe, and three times the saphenous ext. at the edge of the Achilles tendon. The nerve is stretched with the finger or a forceps, principally towards the distal end. He noted in the etiology: tabes, diabetes, syringomyelia and alcoholism. The evacuation of the ulcer alone will not cure, but stretching the nerve alone will accomplish it, though much more slowly. He believes that stretching the nerve is also applicable to tumors on amputation stumps, and zoster eruptions, as well as to other cutaneous affections with a nervous basis.—*Cbl. f. Chir.*, November 19.

THE RADICAL CURE OF HERNIA.—At the Académie de Médicine, M. Lannelongue presented some children on whom he had a year ago practised his operation for the radical treatment of hernia. The success was conclusive. Since that time he had treated a certain number of other patients, with the following results:—Out of 44 young subjects, whose ages ranged from four months to twenty years, he obtained 41 cures. Of the three unsuccessful cases, one was operated on a second time and cured; another belonged to that class of hernia which did not admit of the treatment by chloride of zinc, while the third was that of a half imbecile patient who insisted on getting up the day following the operation. Of five cases in persons of from 20 to 60 years of age, some of whom presented double hernias, all were cured.

In referring to the mode of operating, the speaker said that care should be taken not to inject the chloride of zinc into the peritoneum or wound the spermatic cord. The first accident could be avoided by having an assistant place his fingers on the peritoneal orifice of the inguinal canal, and the second by drawing down the cord with the index at the moment of making the injections. He generally made two or three injections inside and outside the cord, each injection containing 10 to 12 drops of the chloride of zinc solution at one in ten. As the injections were frequently painful, chloroform should be given. The patients should keep the bed with a slight compressive bandage for three days.

THE MODERN DOCTOR.

When Galen made his pretty pills
To cure all sorts of human ills,
And felt the pulse to see if he
Could well apply the remedy,
He little thought, this man so great,
What was to be the doctor's fate.
"Down with the scab" or "hang the lout"
The cry sent up with every shout,
When work is scarce and workmen "sweat"
Their life blood for their bread to get,
Does not apply the doctor to,
So these men say, "What's he to do?"
To be a man? and flout the crew
Who cut him down like any Jew?
Oh! no, he crawls and licks their feet
Like hungry dogs loose in the street.
He scrapes and fawns for every crumb,
Yet in his owner's service dumb,
And thanks them humbly for his dole
While he scarce calls his own his soul.
The doctor may the toxin find
And "give" the remedy to mankind:
May chloroform and ether see
Prevents the pang of agony:
And ceaseless strive for human good
As no man else e'er could or would.
All these he found for human weal
Nor makes for gain the least appeal,
No patent covers his discovery,
It's given to all poor sufferers free,
It's not hung up by the poor "leech"
Out of any human being's reach.
If pain is added to man's woes
He straight into the hospital goes,
But what is that to men who set
This motto up, "Let *others* sweat"!
Their sisters too, in solemn clave,
Resolve to make the Doctor slave.
They run around and find one who,
Poor soul, has little else to do,
Straightway they play the game of bluff
Unless he's made of sterner stuff.
And when they want a man of skill
They take another doctor's pill,
Meanwhile he runs till they get well
And finds at last his doom is h—l.

—TIPLIN, from Bobcaygeon *Independent* of Dec. 30th, 1898.

HOW TO PREVENT COUGHING.—It is "going the rounds" that a doctor, by the promise of rewards and punishments, succeeded ininducing children in a hospital ward to simply hold their breath when tempted to cough, and in a little while he was surprised to see how some of the children entirely recovered from the habit. Constant coughing is precisely like scratching a wound on the body; so long as it is done the wound will not heal Let a person, when tempted to cough, draw a long breath and hold it until it warms and soothes every air cell, and some benefit will soon be received from this process.

Book Reviews.

A TEXT-BOOK OF OBSTETRICS, by B. C. Hirst, M.D., Professor of Obstetrics in the University of Pennsylvania. 653 illustrations; 846 pages. Philadelphia, W. B. Saunders; Toronto, J A. Carveth & Co 1898

This work impresses the reader most favorably. From the bibliopegic point of view it is excellent. the illustrations are very good and new, and the mechanical work well executed throughout. The author's part too has been admirably well done. One of the outstanding merits of the book from the student's point of view, is the fullness and yet compendiousness with which it covers the medical side of the subject, the diseases of the pregnant woman and the new born infant. The parts into which the work is divided are seven—pregnancy (anatomy, physiology and pathology); the physiology and management of labor and of the puerperium; the mechanism of labor; the pathology of labor; the pathology of the puerperium; obstetric operations; and the new-born infant. One chapter particularly worthy of note is that on the signs of pregnancy—the best resumé of the subject which we remember having seen. The pages (124) devoted to the treatment of anomalies in the forces of labor are, while brief, most exhaustive in the treatment of the various most important conditions causing delay in delivery The author speaks decidedly in favor of the Walcher position in contracted pelvis. It may be noted that the author's remarks upon the value of anæsthetics in labor, as indeed upon all obstetrical subjects, are marked by a moderation and reasonableness which are always the mark of sound scholarship. The work, if generally adopted as a text-book, as it should be, will do much to advance obstetric practice on this continent.

A TEXT-BOOK OF PATHOLOGY by Alfred Stengel, M.D. Instructor in Clinical Medicine in the University of Pennsylvania etc. 372 illustrations; pp. 848. Phila.: W. B. Saunders. Toronto: J. A. Carveth & Co. Cloth, $4.00 net; half-morocco, $5.00 net.

This is a very concise, practical, well gotten up work. It bears evidence of its American authorship on almost every page in the abbreviated and modernized form given to many of the scientific terms of Greek and Latin origin a tendency with which the reader, whose primary and literary training has been adequate, cannot sympathize. As a compendium of information the work is worthy of confidence One is pleased to see adequate mention made of the *gas bacillus, B. arroques capsentatus*, under the head of infections emphysema. The usual division of the subject into General and Special Pathology is followed. The excellent and vigorously systematic treatment of each subject under the latter head is particularly praiseworthy. As an example, each portion of the respiratory system, say the trachea, is taken up in the same order—Malformations, Congenital and Acquired; Circulatory Disturbances, Inflammations. Infectious Diseases Tumours The references to malformations strike the practical reader as being of great interest and are more conveniently placed in this work than in any we have yet seen.

INTERNATIONAL CLINICS: A quarterly of Clinical Lectures on Medicine, Neurology, Surgery, Gynæcology Obstetrics. Ophthalmology Laryngology. Pharyngology Rhinology, Otology, and Dermatology, and Specially Prepared Articles on Treatment and Drugs. By Professors and Lecturers in the leading Medical Colleges of the United States, Germany, Austria, France, Great Britain and Canada. Edited by Judson Daland, M D, (Univ. of Penna.), Philadelphia; J Mitchell Bruce, M.D., F.R.C.P., London England; David W. Finlay M.D., F.R.C P, Aberdeen Scotland. Volume II., eighth series, 1898, Philadelphia: J. B. Lippincott Company 1898 also Vol. III., eighth series Oct. 1898.

Volume II. and III. of the eighth series of these excellent clinics well maintain the high standard set in previous volumes. Among the contributors are such well-known clinicians as Prof Von Jasch, N. Senn W. W. Keen, Peance Gould Alex. M. Phedson, T. Pickering Pick, Paul F. Munde, Lauder Brunton, James Andies and others. The subjects chosen are so varied and eminently practical that the clinics must prove of great value to the general practitioner by keeping him in touch with the hospital experiences of the leading clinicians in all parts of the world.

The editors and publishers are to be congratulated on placing before the profession such a storehouse of up to-date, useful information.

NERVES AND FOOD.—Sir Henry Thompson, writing in the *Nineteenth Century*, makes the following remarks upon the altered diet which has become necessary, owing to the extraordinary changes affecting man in every rank of life and his surroundings in all parts of the civilized world, which have taken place during the last sixty years. "It is difficult—perhaps impossible—for the present generation to realize the contrast presented in respect of the demand now made on man's activity, especially that of his brain, during, say, the last thirty or forty years, with that which was required by the routine of life as it was in the 'thirties.' The wear and tear of existence has enormously increased, and the demand for rapid action and intense exertion by the nervous system is certainly tenfold greater now, to make a moderate estimate, than it was then. A railway appeared in the first year of the decade named; the penny post and the electric telegraph not until its close; while the press, both daily and weekly, now gigantic, was then, by comparison, insignificant and diminutive. For the great majority, even of business men, life was tranquil and leisure plentiful, while competition was almost unknown; I need not attempt to describe what it is now. Such changes have naturally been the cause of permanent injury to many whose powers sufficed for the quiet time, but gave way in large and increasing number under the inevitable struggle which issues in 'the survival of the fittest.' The necessary result of this extreme demand for brain activity, since that organ is the sole source of energy on which all the functions of the body, including that of digestion, depend, is an insufficient supply for this important process. Under these circumstances nothing can be more important than to provide food of a kind and in a form which will economise the work of the stomach. It must not be bulky; much of it may be advantageously soluble in form so as to be rapidly and easily assimilated, even pre-digested sometimes, and when solid not requiring much mastication. I have found nothing which fulfils these conditions so completely as the various concentrated extracts of meat which are now so extensively used. A teaspoonful of sound beef-extract in a breakfast-cup of hot water, when the brain is fatigued and the stomach unfit for work, is often the best antidote possible, reinvigorates the system, and prepares it for a light meal or for a little more work, as the case may be—a result far too frequently sought through the pernicious habit of obtaining temporary relief in a glass of wine or spirit."

Dr. Sherman writes of protonuclein: My first practical experience with protonuclein was on myself. About two and a half years ago I was taken with a severe attack of acute catarrhal inflammation of the nasal mucous membrane which rapidly extended down the trachea into the bronchi. It began on a Friday morning with an almost incessant sneezing, accompanied by blocking of the nose, fullness in the head and headache, followed later in the day by a thin, copious discharge from the nose, and an irritating cough. By 5 o'clock p.m. the same day my headache was severe, my limbs all ached, and, on taking my temperature, it registered 101°. I had had similar attacks before, none apparently quite

so severe, which always run a course of from one to three weeks. I had tried quinine and other remedies without any appreciable benefit, and was a willing subject to try something new. I had a few samples of protonuclein and began to take them *ad libitum*, starting about 5 o'clock in the evening. By Saturday morning I felt some better and continued taking the preparation through all that day, still *ad libitum*, and by evening, twenty-four hours after I began its use, felt considerably improved. I continued taking more during Sunday, when my nose cleared up, and the headache, fever, cough and soreness in my limbs disappeared. By Monday evening, after three days' treatment, I was practically well and attended a meeting of the Detroit Medical and Library Association. Since then I have always prescribed protonuclein in these acute catarrhal affections with the same happy result Experience has taught me that the proper dose for such cases, in the adult, is from six to twelve grains repeated every two to three hours. The treatment should be continued with smaller doses for a few days after the disease has disappeared to prevent a relapse.

I have found protonuclein especially useful in the treatment of bronchopneumonia in infants and children. In these cases I usually give from two to four grains, according to age, repeated every two to three hours. and find that a recovery takes place in from three to five days. I have had remarkable success in treating pneumonia with this preparation and will briefly report one case.

My mother, aged seventy-two years, on April 8, 1897, suffered a severe chill about 9 o'clock in the evening. Two hours later when I first saw her she complained of pain in the right side; was coughing up bloody mucus, and was very uneasy. Her heart had been irregular for some years, but now the pulse was 130 and her temperature 103°. Physical examination revealed pneumonia of the right lung. I prescribed two grains of phenacetin and six grains of protonuclein to be repeated every two hours. By 10 o'clock the next day her temperature was 99 3-5° and her pulse 108; the pain in her side was less and she felt much better. The phenacetin was discontinued and the protonuclein continued. By the third day her temperature was normal and she felt so well that, in spite of my protests, she was determined to sit up. She coughed up rust-colored sputum for six or seven days, but otherwise felt quite well. She has had no trouble with her lungs since.

Protonuclein has a wonderful effect in maintaining the spirits and vitality of a patient during fever and has no depressing effect, while it reduces the temperature. This is particularly noticeable in typhoid cases. They do not lapse into that stupid condition which is so characteristic of this disease.

When protonuclein is taken in large doses, say ten to fifteen grains repeated every two or three hours. it produces a deafness and ringing in the ears very similar to that produced by large doses of quinine. In such doses it may also cause an unsteadiness of the nerves and an increased frequency of the heart's action. If this condition is observed during the treatment of a disease it is well to withhold a few doses, when these symptoms will readily disappear without leaving any bad effects.

Publishers' Department.

ANNOUNCEMENT OF IMPORTANCE TO EVERY PHYSICIAN.

Messrs. Lee Brothers & Co. announce for publication in March, 1899, the first volume of *Progressive Medicine*, a new annual which will be issued in four handsome octavo, cloth bound and richly illustrated volumes of about 400 pages each. The several volumes will appear at intervals of three months. In this age of unusual progress, so rapid is the advance in all departments of medical and surgical science that the need for condensed summaries which shall keep the practitioner up to date at the least possible expenditure of valuable time has become imperative. Many attempts in the way of Year-Books, Retrospects and Abstracts have been made to meet this growing need, but in nearly all of these the process of condensing has not been preceded by a sifting of the good from the useless, and consequently the reader is presented with a mass of information from which he must select with care and study the items which are useful and reliable.

What the busy physician needs to-day is a well-told tale of medical progress in all its lines of thought, told in each line by one well qualified to cull only that matter worthy of his attention and necessary to his success. He needs material which shall teach him all that the master of his specialty knows of the year's work.

It is with the object of presenting only such readable and useful material that these volumes are published, and every contributor to the pages of *Progressive Medicine* will say what he has to say in an original narrative form, so that every statement will bear a personal imprint expressing not only the views of the author cited, but the opinion of the contributor as well.

To insure completeness of material and harmony of statement, each narrative will receive the careful supervision of the General Editor, Dr. Hobart Amory Hare, whose reputation will everywhere be acknowledged as ensuring practical utility in a high degree. Those associated with Dr. Hare in the production of *Progressive Medicine* include a brilliant gathering of the younger element of the profession, well representing the class which is so energetically contributing to make modern medical history.

With the appreciation of the self-evident utility of such a work to all practitioners, the publishers are enabled to ask the very moderate subscription price of ten dollars for the four volumes.

The publishers offer to send full descriptive circulars and sample pages to those applying for them.

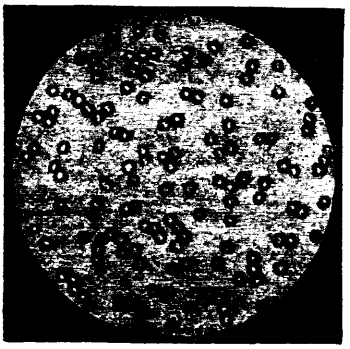
"The greatest therapeutic discovery of the age, and of the ages, is that where we cannot produce good blood we can introduce it."

What is Hæmatherapy?

A New Thing—and a New Name which, though literally translated (Blood Treatment), may not convey to every one a definite idea. It is a treatment which consists in opposing to a condition of disease the very power—good and sufficient Blood—that would naturally prevent it, that would still cure it spontaneously, and that actually does cure it spontaneously, wherever the blood-making work of the system is perfectly efficient; and therefore also *will* cure it, if a deficiency of the vital element be supplied from without, under proper medical treatment.

That Blood is such a power as here described, is an undisputed physiological fact. Its transmission from one animated organism to another, for the purpose of supplying a defect in the latter, is the substance of the Blood Treatment; and How to Do this, in different cases, is the form or description of the same. Blood may be taken from a healthy bullock (arterial blood—elaborated with due scientific skill); or it may be obtained in the well-attested living conserve known as bovinine, from any druggist; and may be introduced into the veins of the patient in either of four ways, that may be most suitable to the case: viz.: by the mouth and stomach; by injection, with one-third salt water, high up in the rectum; by hypodermical injection; or by topical application to any accessible lesion.

A FILM OF BOVININE:
Showing the Blood-corpuscles Intact.



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THE CURE OF PULMONARY CONSUMPTION

is one of the latest and most wonderful developments of Blood Power—introduced mainly by the mouth, and sometimes also by spraying bovinine into the trachea by an atomizer. Every week of judicious internal blood treatment, with proper medical and hygienic care, has resulted in steady improvement as to all symptoms, with scarcely an instance of check, much less of relapse, until complete apparent cure, and that in the more advanced stages of the disease. As further examples, may be mentioned: Anæmia, Cholera Infantum, Typhoid Fever, Hæmorrhagic Collapse, and many other of the most dangerous and aggravated diseases.

IN SURGERY: A CHRONIC ULCER,

of no matter how long standing or obstinate and aggravated character, can be cured with certainty—at least, the first instance of failure has yet to be heard of—by constant application of bovinine to the wound with proper surgical treatment and sterilization. Such cases are usually cured in from four to six weeks. So of traumatic injuries of all kinds; carbuncles, fistulas, abscesses, and even gangrene

NUMEROUS CLINICAL REPORTS

of well known Physicians and Hospitals, where the Power of Supplied Blood is constantly relied on as a cardinal factor in the cure of disease and support of surgery, are at the service of every practitioner who desires to keep up with the progress of his profession, and may readily be obtained (including, of course, the technique and subsidiary treatments pursued) by applying to

THE BOVININE COMPANY, 75 West Houston Street, New York.

Leeming, Miles Co., Sole Agents for the Dominion of Canada.

We desire to call special attention to Parke, Davis & Company's Glycerinated Vacine Virus. Put up in glass tubes, its activity is assured by physiological tests, and the greatest possible care is taken to render it perfectly aseptic. It is put up in individual tubes, securely sealed, $1.00 per case of ten tubes.

The New York Pharmaceutical Association, through their agent, Mr. Gibson, 88 Wellington St., Toronto, are again sampling the profession with their elegant preparations, the Lactophine Elixir with Gentian and Iron, also with Bismuth. They are, indeed, most palatable preparations, and should he largely prescribed by the profession.

Liquor Ferri Albuminatis (Lett's). Whilst Albuminate of Iron has for several years been prescribed by physicians throughout Canada, it has been found that the high price and deterioration in quality of some of those preparations on the market, together with some other objectionable features has been a deterrent to its continued use. Lett's preparation of this valuable Salt of Iron entirely overcomes the objections hitherto obtaining, and its value as a chalybete placed beyond the peradventure of a doubt.

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DR. MEYERS (M.R.C.S. Eng., L.R.C.P., Lond.) having found increased accommodation necessary, has removed his Private Hospital to Heath St., Deer Park. The situation of the new Hospital is the best and most attractive in the suburbs of Toronto, having three acres of ground shaded by fine old oaks, and laid out for tennis, bicycling, etc. The interior has been completely renovated and possesses all the necessary appliances for the treatment of

DR. MEYERS' PRIVATE HOSPITAL FOR NERVOUS DISEASES.

Diseases of the Nervous System

Hydrotherapy after the system of Wisternitz, including needle, Russian shower baths, etc., and electricity in its various forms are administered. It has a skilled masseuse and trained nurses, the head nurse having been for several years under Dr. Weir Mitchell, of Philadelphia.

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This is the only Institution at present in Canada devoted exclusively to the treatment of Nervous Diseases.

For Terms, etc., apply to

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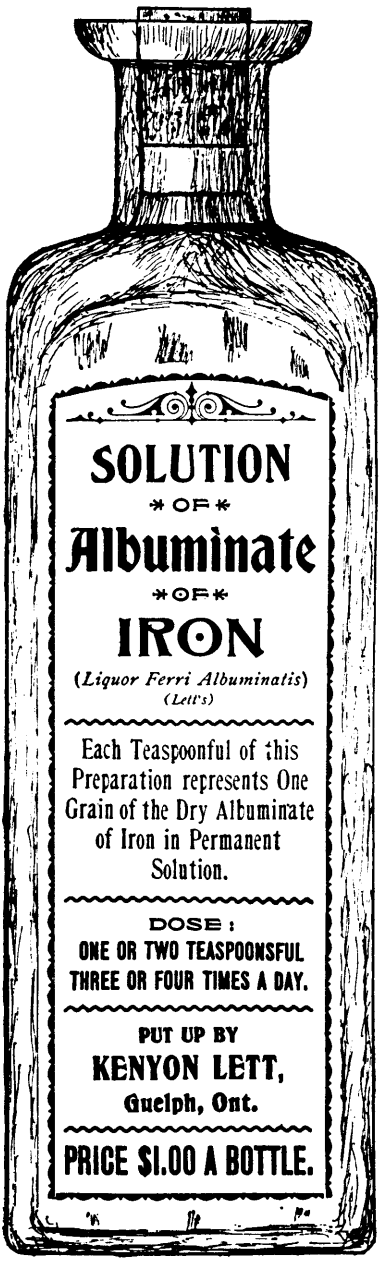
Hours, 2 to 4 p.m. ***192 Simcoe St., TORONTO.***

LETT'S

SOLUTION OF THE ALBUMINATE OF IRON



Is a definite chemical compound having the form in which Iron is found in the blood. So prepared that it is ready for **immediate** absorption and assimilation.

Par Excellence, the blood producer and proper form in which to administer salts of iron in **Anæmia** and **Chlorosis.** It rapidly increases the **Red cells** of the blood, raises the percentage of **Hæmoglobin** and markedly improves the character of the **Lecocytes.**

It is very palatable, perfectly bland and will not disturb the most delicate stomach. **It does not blacken the teeth** or stools, and **will not constipate** the bowels or dry up other secretions.

Put up in ℥xvi bottles only at **$1.00** each, or in lots of not less than 1 doz. at wholesale rates.

Physicians' samples sent upon application.

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INDIGESTION,

MALASSIMILATION
OF FOOD,
AND ALL FORMS OF

DYSPEPSIA,

FORMULA:

℞ Sulphite Soda, 1 gr.
Salicylic Acid, 1 gr.
Nux Vomica, 1-8 gr.
Powd. Capsicum, 1-10 gr.
Concentrated Pepsin, 1 gr.

Dose 1 to 3.

PIL. ANTISEPTIC COMP.

(W. R. WARNER & CO.

ANTI-DYSPEPTIC. ANTI-RHEUMATIC

PIL. ANTISEPTIC COMP. is serviceable in atonic dyspepsia, nervous dyspepsia—in fact all forms of this disease, because it strengthens the lowered digestive vitality. The Nux Vomica and Capsicum, besides promoting involuntary contraction of muscular fibre, relieves flatulence and constipation.

The digestive properties of the Pepsin, assisted by the action of the Salicylic Acid and Sulphite of Sodium, in addition to the above, make this an effective remedy.

One of the most remarkable properties of Lithia is its power of imparting solubility to uric acid.—GARROD.

NORMAL ALKALINITY OF THE BLOOD
is secured by prescribing

WM. R. WARNER & CO'S

LITHIA TABLETS

Rheumatism, Kidney Diseases, Gout, etc., are directly due to abnormal acidity of the blood—Lactic acid in the former and uric acid in the two latter. The treatment should therefore be directed to produce alkalinity of the blood. Lithia is one of the foremost eliminants of the day and is especially valuable for above diseases, but best of all in the form of

Warner's Lithia Tablets 3 & 5 grs.

THE DOSE IS ACCURATE. ECONOMICAL
CONVENIENT FOR ADMINISTRATION EFFICACIOUS

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Write for monograph "Lithia and its place in medicine."

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RHEUMATISM,
GOUT, AND
RHEUMATIC
GOUT.

FORMULA:

℞ Acid Salicylic.
Res. Podophyllin.
Ext. Phytolacca.
Quinia.
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Pv. Capsicum.

Dose 1 to 2.

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(W. R. WARNER & CO.)

ANTILITHIC.
ALTERATIVE.
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PIL. ARTHROSIA is indicated in all conditions of Rheumatism, Gout and Rheumatic-Gout. A marked improvement in this class of diseases follows almost immediately after the administration of Pil. Arthrosia. To be sure of the original Pil. Arthrosia, physicians will please specify "WARNER & CO."

If you would always have uniform results from your prescriptions

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Warner's Soluble Pills offer active ingredients in a form favoring rapid disintegration when taken, with full therapeutic effect of prescribed remedy.

...THEY ARE PERMANENT, POTENT AND RELIABLE...

SUPERIOR TO PEPSIN OF THE HOG.

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A Powder—prescribed in the same manner, doses and combinations as Pepsin.

A Specific for Vomiting in Pregnancy.

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Canadian Medical Exchange Office.

Opened and conducted solely for the Convenience and Protection of Physicians desiring to sell their properties or practices; the arrangement of partnerships, etc., etc. All communications and transactions strictly confidential. The only office of the kind in Canada conducted by a Medical Confrere.

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No. 200—$1800 medical practice, Co. of York—one opposition; population 800. Splendid section, rich farming country surrounding, best of pay. Good will with introduction, $250 cash. No property to buy. The doctor's chattels can be obtained cheap if desired. Best of reasons for selling. Almost any physician can increase this practice to $2,500 the first year, as will be explained.

No. 202.—Practice of $2,000 in village of 1,500 with 2 opposition, County of Halton, on G.T.R. Price, $500. Goodwill and introduction.

No. 197—$3000 practice and the doctor's home in village of 800, Western Ontario, garden of the province, one opposition, price $1500, easy terms of payment. The doctor also has the only drug store in the place, which is making money and which the purchaser can have or not as desired. From the practice and drug store a physician ought to make a living and easily save $2500 a year.

No. 196—$3500 practice, and the doctor's splendid residence in rural village of 200 population, 100 miles east of Toronto. No opposition, rich farmers. Collections average over 92 per cent., established 15 years. Price $4000. Terms, $1500 cash, balance on easy payments.

No. 195—$2000 cash practice in rural village on the St. Lawrence river, with the doctor's residence, thoroughly established, no opposition, fine pay, over 90 per cent. positively good. The chattels may or may not be purchased as desired. Price for everything $2200. Terms, $700 cash, balance on easy payments.

No. 194—Is an enquiry from a doctor in the U.S., who wishes to return to Canada and buy a practice of not less than $2000 yearly in a good town, Whitby, Oshawa, Bowmanville, Coburg, Lindsay, Peterboro, preferred, although any other town would suit—no objection to property, and he can pay cash.

No. 201—Is an offer of the controlling interest in a private hospital, well furnished and well patronized. A splendid chance for a doctor moving into the city. Free fuel, light, food, quarters, etc. A few hundred dollars secures it now.

No. 191.—$4000 annual practice thoroughly esta-blished in village of 1000 population in Minnesota, with the doctor's home is offered for $3500, with two months introduction. On Great Northern R.R. Easy terms. Can pay for whole thing from one year's practice.

No. 193.—$350 buys good will and introduction in nice village of about 1100. Practice is worth $150 per month. Located in Niagara Peninsula.

No. 192.—Medical practice, $2000 cash annually. Population, 1200. No property. 15 miles from Lake Erie. Sickness forces incumbent to retire. Goodwill and introduction less than $500.

No. 189.—Is a growing practice in a city of 12000 population, Western Ontario, which the doctor must have help to carry on, from ill health. He offers a partnership for a year and full possession thereafter to purchaser of his home at $5000 on easy terms. The property is an ideal location for a doctor and cost between 7 and 8000 dollars.

No 190. $1500 practice in County of Hastings in village of 300 population, together with the doctor's office and stable outfit is offered for quick sale for $250, so the doctor can accept a partnership offered. The chattels alone are worth the price.

No. 188.—$2500 practice unopposed in village of 700 on railroad, within 25 miles of Picton. No property. Price $700 for goodwill and introduction.

No. 187.—Practice of $150 per month and the doc-tor's suitable home, office and stable outfit, all for $1000, half cost, small rural village, Co. of Prince Edward.

No. 182.—$3000 practice with office furniture and road outfit for price of chattels alone, viz., $900. Situated in Minneapolis. The doctor is going to Europe.

No. 181.—Is a partnership in a large town practice, within 150 miles of Toronto.

No. 179.—Is an enquiry by a Canadian just home from Germany after 3 years absence. He wants a practice in nice village or town worth at least $4000 per year—with or without property, as price is no object if location and practice suits.

No. 176.—Is a partnership in a $10,000 Eye and Ear practice in Minneapolis.

No. 174.—$2000 practice, unopposed, Co. of Kent, together with the doctor's home and thorough introduction, for $1,000. Terms, $500 cash, balance to suit. This is a good opening.

No. 169.—$4500 practice, and the doctor's fine home in town of 5,000, Co. of Lambton. Price, $7,500. Terms, $2,500 cash, balance anyway to suit.

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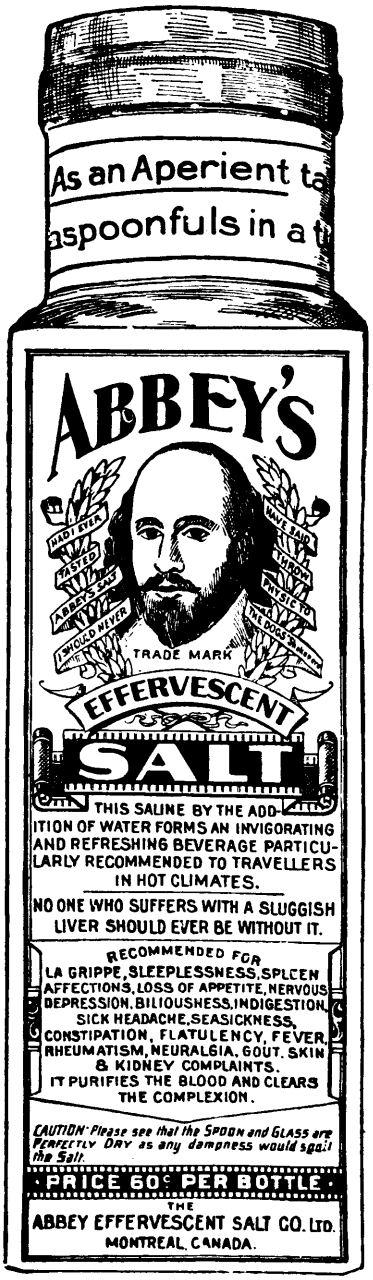

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A pleasant effervescing aperient, taking the place of nauseating mineral waters. Recognized and prescribed by eminent members of the profession in Great Britain, Europe and Canada.

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is more than filling the requirements of the numerous Surgeons and Physicians who, for some time past, have advised us to dispense UNGUENTINE in COLLAPSIBLE TUBES, of a size convenient for pocket, or satchel in order to prevent substitution and to guarantee a uniform price. The demand is increasing very rapidly, demonstrating that the range of usefulness of UNGUENTINE is widely extended by means of this new thoroughly antiseptic container.

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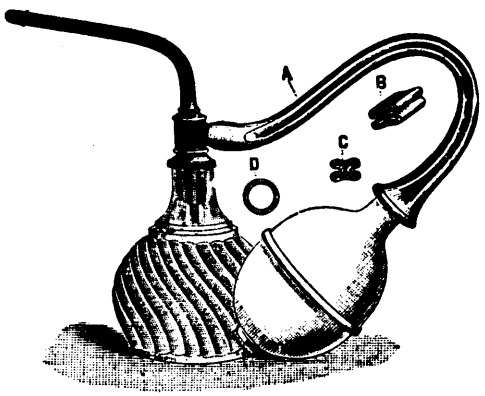
We invite your attention to our **Alpha Atomizers.** Note the tube in its different views, A B C D.



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