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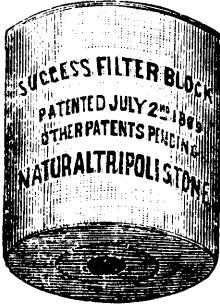
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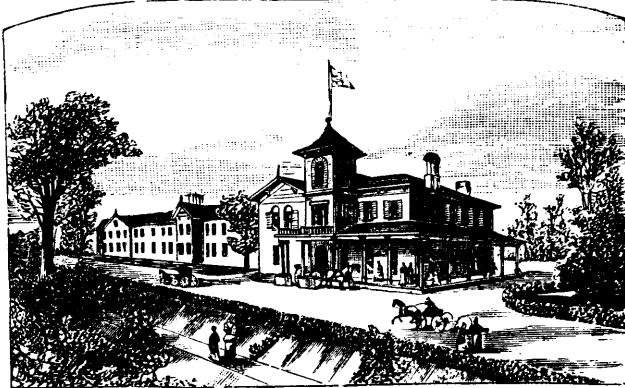
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Piperina.....½ gr.

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Cinchonidise Sulph.....2 grs.

Cinchonidise Sulph.....3 grs.

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Pv. Capsicum.....½ gr.
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Aperient.

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Ol. Res. Capsici.....½ gr.
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(Dr. Shoemaker.)

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Aloin.....½ gr.
Gingerine.....½ gr.

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Astringent.

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Plumbi Acet.....1½ gr.

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Cathartic Comp. Imp. 3 grs.

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Ext. Hyocyami.....1 gr.

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Pv. Potass. Nitrate.....1 gr.
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Phosphori.....1-50 gr.
Pv. Nuc. Vom.....1 gr.
Sol. Canthar. Conc't.....1 m.

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Ext. Hyocyanini..... $\frac{1}{4}$ gr.
Ext. Cannab. Ind.....1-10 gr.

Ulemin..... $\frac{1}{4}$ gr.

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Phosphori.....1-50 gr.
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Pulv. Aloes Socot..... $\frac{1}{4}$ gr.
Pulv. Zingib. Jam.....1 gr.
Ferri Sulph. Exsic.....1 gr.
Ext. Conii..... $\frac{1}{4}$ gr.

Tonics—continued.

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Ext. Nuc. Vomice..... $\frac{1}{4}$ gr.

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Sulphite Soda.....1 gr.
Salicylic Acid.....1 gr.
Ext. Nuc. Vom..... $\frac{1}{4}$ gr.
Powd. Capsicum.....1-10 gr.
Concent. Pepsin.....1 gr.

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Ferri Sulph..... $\frac{1}{4}$ grs.
Potass. Carb..... $\frac{1}{4}$ grs.

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Phosphori.....1-100 gr.
Ext. Nuc. Vom..... $\frac{1}{4}$ gr.

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Pv. Nuc. Vom..... $\frac{1}{4}$ gr.
Gingerine.....1-16 gr.
Sulphur..... $\frac{1}{4}$ gr.

Ferri (Quevennes).....2 grs.

Ferri Carb (Vallett's), U.S.P. 3 grs.

Ferri Iodid.....1 gr.

Neuralgic.

Quinise Sulph.....2 grs.
Morphise Sulph.....1-20 gr.
Strychnise.....1-30 gr.
Acid Arsenious.....1-20 gr.
Ext. Aconiti..... $\frac{1}{4}$ gr.

Quidise Comp.

Quinise Sulph.....1 gr.
Ferri Carb. (Vallett's).....2 grs.
Acid Arsenious.....1-60 gr.

Quinise et Ferri.

Quinise Sulph.....1 gr.
Ferri Redact.....1 gr.

Quinise et Ferri et Strych. Phos.

Quinise Phos.....1 gr.
Ferri Phos.....1 gr.
Strychnise Phos.....1-60 gr.

Tonics—continued.

Quinise Iodoform et Ferri.

Iodoform.....1 gr.
Fer. Carb. (Vallett's).....1 gr.
Quinise Sulph..... $\frac{1}{4}$ gr.

Sumbul Comp. (Dr. Goodell.)

Ext. Sumbul.....1 gr.
Assafetida.....2 grs.
Ferri Sulph. Exsic.....1 gr.
Acid Arsen.....1-40 gr.

Tonic.

Ext. Gentiana.....1 gr.
Ext. Humuli..... $\frac{1}{4}$ gr.
Ferri Carb. Sacch..... $\frac{1}{4}$ gr.
Ext. Nuc. Vom.....1-20 gr.
Res. Podophylli.....1-25 gr.
Ol. Res. Zingib.....1-10 gr.

Zinci Posphide and Nuc. Vom.

Zinci Phos.....1-10 gr.
Ext. Nuc. Vom..... $\frac{1}{4}$ gr.

Strychnise.....1-16, 1-20, 1-30, 1-32, 1-40 and 1-60 gr.

Pil. Phosphori, 1-25, 1-50, 1-100 gr.

Pil. Phosphori Comp.

Phosphori.....1-100 gr.
Ext. Nuc. Vom..... $\frac{1}{4}$ gr.

Pil. Phosphori Cum. Nuc. Vom.

Phosphori.....1-50 gr.
Ext. Nuc. Vom..... $\frac{1}{4}$ gr.

Pil. Phosphori Cum Ferro.

Phosphori.....1-50 gr.
Ferri Redact.....1 gr.

Pil. Phosphori Cum Ferro et Nuc. Vom.

Phosphori.....1-100 gr.
Ferri Carb.....1 gr.
Ext. Nuc. Vom..... $\frac{1}{4}$ gr.

Pil. Phosphori Cum Ferro et Quinise et Nuc. Vom.

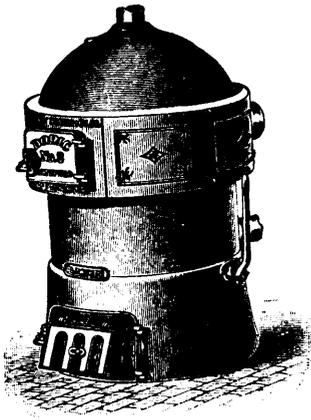
Phosphori.....1-100 gr.
Ferri Carb.....1 gr.
Quinise Sul.....1 gr.
Ext. Nuc. Vom..... $\frac{1}{4}$ gr.

Pil. Phosphori Cum Quinise.

Phosphori.....1-50 gr.
Quinise Sulph.....1 gr.

Quinise et Ferri Carb.

Quinise Sulph.....1 gr.
Ferri Carb.....2 grs.



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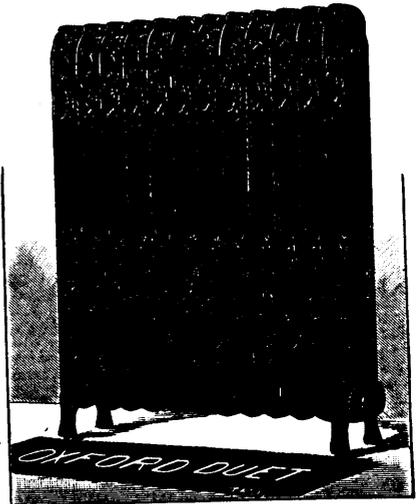
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T. S. T. SMELLIE, M.D.
Fort William, Ont., July 3rd, 1897.

The Canada Lancet.

VOL. XXX.]

TORONTO, SEPTEMBER, 1897.

[No. 1.

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INERTIA OF THE UTERUS FOLLOWING THE USE OF CHLOROFORM.

BY J. A. WILLIAMS, M.D., L.R.C.P. LOND., INGERSOLL, ONT.

MR. PRESIDENT AND GENTLEMEN:—

The case we bring before you in this paper is one from general practice, such a one as may occur at any time without warning. For emergencies, that are at once dangerous to the patient and to the reputation of the physician, we should have in our minds a well thought out method of procedure, otherwise we may be taken at a serious disadvantage. It is not claimed that there is anything new or original in the methods pursued, or in the thoughts herein given expression to, but it is hoped they will lead to such consideration of the subject, that after your discussions we can settle in our minds a line of treatment in readiness for such cases.

Mrs. A. is a tall, muscular woman, bony and angular, with a broad pelvis and no superabundance of flesh. A woman accustomed to hard work, has raised several children, and is the mother of grown-up daughters. She is approaching forty years of age. She had prepared herself for an "easy time" by taking five bottles of a popular remedy called "Indian Woman's Balm." We know nothing of its composition. She was taken in labor early in the afternoon on a spring day in 1896. The services of Dr. Rogers were called into requisition. The labor progressed favorably until the head was well engaged in the pelvis, when advance-

ment became much less marked, and at times seemed to have ceased, notwithstanding the pains were regular and strong. As she was vigorous and in good health, nature was allowed to put forth her best efforts until well along in the night, when advancement was no longer appreciable. As there was plenty of room in the pelvis the doctor determined upon the use of the forceps. After administering chloroform they were applied; but, notwithstanding the doctor's best efforts, he was unable to complete the accouchment. Recognizing that the case was out of the ordinary, and considering the arduousness and risk of properly managing a difficult forceps case, and at the same time giving the anesthetic to a patient rather obstreperous, the doctor determined upon having assistance. At this time, about six in the morning, the writer was called in.

The patient's general condition was satisfactory. There was no untoward symptoms, except some indications of fatigue. The head was well down in the pelvis, which was sufficiently roomy that with the aid of forceps we might reasonably expect speedy delivery. The foetus was in the first, or left occipito anterior position. At the request of Dr. Rogers I administered chloroform, and he re-applied the forceps. Strong efforts were made to bring forward the child, and progress was made; but, in consequence of a tiresome night and hard work, the doctor became fatigued and invited me to a change of occupation. He now administered the anesthetics while I used the instruments. When the head was delivered—no easy task—there was great difficulty with the shoulders, because of their large size relatively to the head. Finally, the body was born, much more slowly than usual, because of its large size. The child weighed fourteen pounds. During the progress of the delivery the doctor followed the fundus, making pressure with his hand, and continued to do so for a short time afterwards. When the infant had been disposed of, and after waiting a few moments, I returned for the placenta, which was found lying in the vagina. It, with a small quantity of clots, was removed.

To facilitate the use of the forceps, the patient had been placed transversely on the bed, with the hips close to the edge, the legs supported. This position enabled me to notice that the delivery was being followed by an unusual amount of hæmorrhage. Proceeding to ascertain the cause, the hand was passed to examine the condition of the os and the uterus. No os or uterus was recognizable, but in place of these a pelvis filled with fresh clots and blood. On a more careful examination the os was found to have been dilated by the passage of the foetus and to have remained so, while at the same time the fundus had completely collapsed. The uterus was without tonicity. The doctor's hand, which had been removed from the uterine globe, was now returned to the lower abdominal region, but the tumor was gone. Hot water was at once called for, and fortunately, thanks to the forethought of the doctor, a goodly supply was immediately available. While the nurse was procuring it a hypodermic injection of the fluid extract of ergot was administered, and immediately after one of strychnine. A Davidson's syringe, the only one available, was brought into requisition. The nozzle was carried boldly to the top of the uterus, and the collapsed portion, still flaccid, carried back to its place. The hot water, so hot it could scarcely be borne by the hand,

was then pumped in, and at the same time friction was made with the one hand in the interior and massage with the other on the exterior of the uterus. After about a quart of water had been forced in and a correspondingly large place had been cleaned of clots and blood at the fundus, for the bleeding ceased in that part with which the water came in contact, and contractions commenced. As the hand and water cleared and cleaned down to the cervix the contractions followed, leaving a firmly closed, clean uterus. The passages were then washed out, and the danger was over. There was no return of the inertia. The patient progressed favorably, and on the tenth day was in the street. Very shortly afterwards, however, she had an attack of pelvic cellulitis, from which she was in bed for some weeks.

On following this case, the first question that forces itself upon us is, why did this uterus fail to contract, why this inertia? When there is a marked pre-disposing cause, such as the weakness resulting from albuminuria, from frequent recurring pregnancies; from over-distensions, as from pluriparity or from polyhydramnios; or from the effect of chronic diseases, there are usually premonitory warnings, by weak contractions through the first and second stages of the labor, heralding insufficient uterine action in the third stage. In this case none of these conditions existed, and there were no such premonitory warnings. The pains were strong and vigorous through both stages.

In the absence of these predisposing causes, we look for something more immediate. The too rapid emptying of the uterus is considered among these. This cause had no existence in this case, for the very significant reason that we were not able to make a rapid delivery had we been so disposed. Second, when the uterus is rapidly emptied, and care is not taken to follow down with the hands upon the abdomen, lessening the organ as the contents are removed. Here, again, we were not at fault. The rapid delivery did not occur, and Doctor Rogers carefully followed down the uterus during its descent, and held it for some time.

Other than the time the labor lasted, about eighteen hours, and its severity, there were none of the usually assigned causes of inertia present, and neither of these was sufficiently marked to lead to an expectation of this kind.

In the absence of other causes, we are forced to look upon the administration of chloroform as being the most potent influence, probably aided by the effect of eighteen hours' severe labor.

Opinions of leading obstetricians do not harmonize as to the effect of this anesthetic on uterine contractions. While some regard it as being without effect, others, whose opinions are no less deserving of weight, believe its influence so great that it can be used only with the utmost care in obstetric practice. We will make no attempt to follow writers, but will make bold to say, our experience leads to the belief that the truth is between these extremes. Much depends on the extent to which the anesthesia is carried. The more profound, the greater the extent to which it influences uterine action, and the less its anesthetic influence, the less disturbance of the normal contractions.

It will be within the experience of most practitioners, that immediately it is given the pains become less frequent and have less strength. This influence continues during its administration. Because of this, when the contents of the womb have escaped, there is an absence of or a diminution of, that contraction that is very necessary and usually follows a normal case. Post-partum hemorrhages are consequently more frequent after its administration, unless precautions are taken to prevent them. Fortunately, in obstetric cases the full benefit may be obtained from the anesthetic without the anesthesia being carried to the extent that is necessary for major operations; by taking care to limit the effect and at the same time to use such measures as will stimulate uterine contractions, we may secure all the advantages with comparatively little risk of the dangers. In this case, partially perhaps from a somewhat lengthened administration, our patient was too profoundly anesthetised at the time the contents were removed. While the contractions were sufficiently strong to aid in the final expulsion of the child, and in the detachment and expulsion of the placenta, yet when the internal irritation of these substances was gone, the period of rest which is usual in normal cases became prolonged into a dangerous inertia. In the period of rest following natural birth there is not an entire absence of tonicity. While the organ is passive it still retains form, and may by slight irritation be called into activity. In this complete inertia all form is gone, the uterus is in a flaccid condition.

This inertia allowed "Spontaneous Passive Uterine Inversion to take place." Duncan recognizes four kinds of inversion as to methods of occurrence. These are: First, Spontaneous Passive Uterine Inversion; second, Artificial Passive Uterine Inversion; third, Spontaneous Active Uterine Inversion; and, fourth, Artificial Active Uterine Inversion. For any of these to take place there must be partial inertia. For the first and second there must be complete inertia, as we had in this case. In the active form, the endeavor in treatment, and the chief difficulty, is in the restoration of the organ to its natural position—its reposition. This being fully accomplished, the contracti will maintain it so long as that contraction is continued in full natural force. In the passive forms the difficulty is not in the reposition, but in overcoming the inertia which allowed the inversion to take place. In either case the consequence may be serious, if prompt steps are not taken, or if these are not crowned with success. Our case being one of passive inversion, the endeavor was to overcome the inertia.

As the chloroform was the main cause, the first step must be to get from under its influence. To this end we discontinue to administer it, and by an abundant supply of fresh air we facilitate the escape of what is in the system. We had in our favor the very important fact, nicely expressed by a recent writer, "That chloroform produces no permanent paralysis, only anesthesia, and if elimination and excitation can be obtained, the temporary condition will soon be overcome." Before, however, this inertia is overcome, it is of the first importance that the organ shall have been repositioned, otherwise there may be great difficulty in doing so. Hence the necessity of early recognition and prompt action.

Though the cause is largely removed, we would not be justified in waiting for nature unaided to resume her wonted functions and restore the tonicity. Could time be allowed without danger, there is no doubt she would do so. But each moment permits of great loss of blood, which impairs, if it does not endanger, vitality. We must, therefore, take steps to call her from slumber to her accustomed activity.

In our case we gave ergot and strychnine hypodermatically. We are quite aware some good therapeutists tell us these remedies neither severally nor jointly can initiate uterine pain. Yet, admittedly, they have the power of stimulating into activity the nervous system, and this arousing of the vital energies plays no unimportant part in this case, and is practically what we are after. It is admitted, too, that when uterine contractions do exist, these remedies have the effect of stimulating them into greater activity. But, say some, no reliance can be placed upon their producing any effect in less than about two hours after administration, and the case will be terminated before that time. If, for the sake of argument, we concede this to be true, they still come into play to prevent subsequent relaxation which is liable to recur. When administered hypodermatically, we do not believe the action is nearly so long delayed. Fifteen minutes would be more nearly correct, and in many instances evidence of the effects are appreciable in even less time. Were the administration by the stomach we could quite understand the long time, for chloroform anesthesia will much diminish, if it does not entirely arrest, absorption from this organ. Then again, there may be material in the stomach with which our potion becomes intermingled. Absorption of the whole mass must take place before the effect of the dose is secured. All things considered, we are strongly of the opinion that hypodermatic administration is best suited for emergencies.

Our duty is not completed by the removal of the cause and the administration of medicine. Experience has brought into use expedients even more prompt in their action than these. What we used in this case was friction and hot water. The former is an old expedient that has stood the test of time, and is not likely to be superseded. It requires no instrument other than a pair of clean hands, and while the one is in the interior of the uterus making friction on its surface, the other is on the exterior after the manner of bimanual manipulation, using massage. This method is always available, and could the facts be known there is no doubt the saving of many lives would go to its credit. The hot water, while it has not received from the profession the same lengthened recognition, is still a most valuable expedient. Used conjointly, they are a most prompt means of arousing uterine energy and arresting hemorrhage. In our case they did not fail us.

From this case we may draw several important lessons. First, when we use chloroform we should make it a rule to use the least possible amount that will secure the object desired, to have the anesthesia as light and as short as possible. Second, we should make preparation in advance to counteract the effects, which may possibly come without warning. Among the preparations made we may mention the administration of some oxytocic sufficiently early, that its period of activity may be reached by the time

of the delivery. Ergot and strychnine hypodermatically administered will usually meet the requirements; to have prepared at about the right temperature a large supply of boiled hot water, with the necessary appliances for washing out the uterus; and to have a hypodermic syringe, *in order* with ether, atropine, ergot and strychnine in convenient forms for prompt administration.

HÆMORRHAGIC PANCREATITIS.*

BY CHARLES B. SHUTTLEWORTH, M.D.C.M., ASSISTANT DEMONSTRATOR OF ANATOMY TRINITY MEDICAL COLLEGE, TORONTO.

During the last few years, inflammation of the pancreas has attracted considerable attention. Until 1889, when Fitz delivered the Middleton-Goldsmith lecture on Acute Pancreatitis, this interesting affection was not well understood. Fitz, in a masterly manner, gave a brief history, analyzed each of the cases reported up to that time, and brought pancreatitis within the range of the diagnostician, besides throwing some light on its etiology. From a review of the accumulated literature on the subject, he points out that acute pancreatitis is a well-characterized disease, and not a rare affection, but one which should be recognized on account of its probable origin in an otherwise simple affection—a gastro-duodenitis, extending by way of the pancreatic duct. There is also a liability of confounding the disease with intestinal obstruction, with a subsequent useless celiotomy, which operation, if performed in the early stage of acute inflammation of the pancreas, when symptoms of collapse are common, renders the procedure extremely dangerous. Fitz classifies pancreatitis under three headings: (a) suppurative, (b) hæmorrhagic, and (c) gangrenous.

As a history of every case occurring in practice may bring out some new feature which may assist in the diagnosis of a disease which, on account of its sudden termination, has possible medico-legal bearings, I thought the relation of the facts, in a case of the hæmorrhagic form which has recently come under my notice, might be of interest.

T. S., male, aged 35 years; occupation, brakeman; active, robust, but intemperate in the use of alcohol. Had usually enjoyed good health, with the exception of occasional attacks of indigestion. About two years ago patient increased rapidly in weight, and became very fat, at the time of his death weighing 260 pounds. His last illness was of six days' duration, and commenced suddenly in the evening, after a hearty meal. He complained of deep-seated pain in the epigastric region, in the middle line, just under the costal margin. This was accompanied by nausea, and followed by bilious vomiting. The next day he procured some medicine from a druggist and was told to seek medical advice. Hot stupes were during the afternoon applied to the abdomen, which somewhat relieved the pain. He vomited two or three times an hour throughout the day, and on one occasion some blood clots were ejected. On the morning

* Read before the Ontario Medical Association. June, 1897.

of the third day he felt very weak, but got up and dressed, ate a light breakfast and went about the house. Pain was not very marked, and, towards night, had entirely disappeared, although vomiting was incessant. The bowels had not moved up to this time. In the evening he became delirious, was much excited, and thought his friends were conspiring to take his life. He went out and wandered about the streets all night. On the following afternoon, when next seen, he was acting in an irrational manner, and was taken home and put to bed. He did not complain of any pain, but the abdomen was somewhat swollen. On the fifth day sedatives were administered, but he was delirious at times, and restraint was sometimes necessary. He was very anxious and restless, walking about continually. The bowels moved three times during the day, and a small quantity of dark urine was voided. During the night he gradually got worse, breathing became rapid, the pulse was feeble, and the skin covered with cold sweat. This was followed by muttering delirium. Bowels moved involuntarily twice during the night, and death occurred by collapse at daybreak.

At the autopsy, which took place on the same day, the following notes were made: Subcutaneous fat: not great in amount and normal in appearance. Thoracic viscera: healthy; small ante-mortem clot present in right heart. On opening the abdominal cavity, the fat everywhere presented a striking appearance. Numerous cheesy, opaque, tallowy, white plaques, of an irregular shape, varying in size from that of a pin-head to five millimetres in diameter, were generally distributed in the subperitoneal fatty tissue, even in the pelvis, contrasting strongly with the relatively transparent normal fat. These necrotic areas were not elevated above the surface of the peritoneum, and varied much in thickness. The adipose tissue between the folds of the mesentery, mesocolon, and omentum, as well as the perinephritic fat were studded throughout with similar spots, which, since Balsler's paper, have been characterized as *disseminated fat-necrosis*. The liver was large and soft, and showed evidence of fatty degeneration. The gall-bladder was empty, and there were not any calculi in the hepatic ducts. Spleen and kidneys healthy. Urinary bladder empty. The stomach contained a quantity of dark fluid, the walls being normal in appearance. The intestines were distended with gas. The peritoneum showed no signs of inflammation and no fluid was found in the abdominal cavity. There was a hæmorrhagic effusion in the root of the mesentery.

The pancreas was embedded in a large quantity of adipose tissue, and on its external surface appeared purplish-black. The organ was large and very firm, weighing 11 ounces (normal weight, 2 to 3½ oz). On section it presented the following gross appearances. There was a large hæmorrhagic effusion of a dark reddish-brown color into the head of the organ, with numerous smaller areas of a similar character throughout the entire specimen. Areas of fat necrosis could be seen in the interlobular fat, which was abundant. The canal of Wirsung did not contain a calculus.

Microscopic examination showed an extensive interlobular infiltration of fat continuous with the parapancreatic fatty tissue, which would in

part account for the great enlargement of the organ. The interlobular tissue showed the presence of a hæmorrhagic exudate and numerous accumulations of round cells. In some places the fatty tissue appeared granular, and clumps of very fine, brownish, acicular crystals were discernible. These were evidently fatty in origin. The cells of the lobules were indistinct and faintly granular, the nuclei being obscure. In some parts the lobules appeared necrotic. The areas of fat-necrosis consisted of granular detritus, fat droplets and fatty crystals, some of which exhibited a trochate form.

It is to be regretted that a bacteriological examination was not made at the post-mortem.

The symptoms as thus related correspond closely with those observed in similar cases, the exception being the presence of diarrhœa on the last two days of the patient's illness.

Hæmorrhagic pancreatitis generally occurs in perfectly healthy adult subjects, although Dr. McPhedran, of Toronto, has reported an instance in a child nine months old. One-half of the subjects in the cases reported have been very fat, and a small percentage addicted to alcohol. The disease is ushered in by abdominal distress, without obvious cause, though usually attributed to some irregularity in diet. The pain is severe, sometimes agonizing; either constant or intermittent, and is usually located deep in the epigastric region, sometimes to the left of the mesial line. Nausea, followed by vomiting, may be absent, but in the majority of instances is incessant, and may be bilious in character, and even black in color. Tympanites is generally noted, and may be very marked. This is probably due to paralysis of the muscular wall of the bowel by interference with its nervous mechanism, and the subsequent collection of flatus in the coils of the intestine. Constipation is the rule, and resists medicinal treatment, so that obstruction of the bowels is a special factor in the differential diagnosis.

Fever is not usually noted, but when present occurs early and is not marked. The temperature has been frequently sub-normal. Collapse almost invariably supervenes, and usually immediately precedes death. This has been attributed to the involvement of the solar plexus and semilunar ganglia by the hæmorrhagic effusion in and about the pancreas. This will also account for the intense pain experienced in the disease. Death usually results in from two to four days, but recovery is possible, or the disease may recur. Suppuration or the gangrenous form may follow the hæmorrhagic variety.

The etiology of the disease is not yet definitely settled. A history of gastro-intestinal derangement has been obtained in a large percentage of the reported cases, and it is possible that the pancreas is secondarily affected by way of its excretory duct; but if this is the case surely the disease would be of more frequent occurrence. Further investigation from a biological standpoint will, no doubt, clear up this matter, but so far the results of bacteriological investigation have been disappointing. Outside of a variety of bacteria of mild infective character, the cultures made from the pancreas in this affection have proved sterile. Hlava produced hæmorrhagic pancreatitis by injecting the Klebs-Lœffler bacil-

lus into the pancreas of a cat after laparotomy. Predisposing causes are trauma and biliary or pancreatic calculi in the duct.

Various theories have been brought forward to explain the cause of the disseminated fat-necrosis. Balsler, in 1882, considered that the frequent occurrence of pancreatitis with fat-necrosis suggested a close relationship between them. He believed the condition was due to the excessive growth of fat destroying the tissue round about, and from lack of nutrition, causing death of the central portions of fat. He held that the changes in the pancreas were secondary, and also observed that fat-necrosis has often been found in the interlobular fatty tissue of the pancreas, without association with any symptoms during life. Chiari regarded the process as degenerative. Fitz describes two forms of necrosis, a necrobiotic variety and an inflammatory form, secondary to acute pancreatitis, as suggested by the inflammatory infiltration around the periphery of the necrotic areas. Rolleston holds that the death of the fat is brought about by some trophic influences exerted by the abdominal sympathetic system, but offers no proof in support of his theory.

Fat-necrosis has been experimentally produced by Langerhans, by injecting an extract of pancreas into the adipose tissues of animals. He believes that the process is due to the decomposition of neutral fats into glycerine and fatty acid by the fat-splitting ferment of the pancreas, and the subsequent union of lime salts with the acid to form a soap. This view has been confirmed chemically by Barker, of Johns Hopkins Hospital. Hildebrand and others have produced these necrotic areas by ligating portions of the pancreas, and also the efferent vessels, so preventing the secretion of the organ from finding exit by its normal channel. This has also been brought about by introducing portions of the pancreas into the abdominal cavities of animals. Hildebrand injected trypsin into the peritoneal cavity and produced hæmorrhages. He suggests that this result, so often associated with pancreatitis, might be due to trypsin, and that the fat-necrosis was attributable to the same cause as that advanced by Langerhans. Williams, of Buffalo, recently confirmed Hildebrand's experiments on the lower animals.

If the pancreatic affection is responsible for the disseminated fat-necrosis, it is difficult to understand how such complete and extensive degeneration of the fatty tissues could be produced in the short course of such a rapidly fatal disease.

These cases of hæmorrhagic pancreatitis are especially important, not that the disease is of frequent occurrence, but that it must be taken into consideration in the diagnosis from other affections which are more often met with—namely, irritant poisoning, perforative peritonitis, and acute intestinal obstruction.

Since the publication of Fitz's elaborate treatise, a correct ante-mortem diagnosis has been made by Thayer, Körte, Cutler, Atkinson, and Fitz himself. Irritant poisoning is to be excluded by the history of the case, and by a chemical and microscopical examination of the stomach and vomited matter. The absence of pain after meals, blood in the stools, and general peritonitis would exclude perforative ulcer of the stomach and duodenum, as would also a consideration of the history of

the case. Perforation of the gall-bladder by a calculus would be precluded by biliary colic and icterus, and the seat of the pain would rather indicate the gall-bladder as the source of the trouble. Acute intestinal obstruction very closely simulates hæmorrhagic pancreatitis, so much, indeed, that numerous instances have been cited in which unsuccessful laparotomy has been performed and no obstruction found. It has been pointed out by Fitz that intestinal obstruction, which offers the greatest difficulty in differential diagnosis, may be eliminated "by determining, through injection, the patency and capacity of the large intestines, by the immediate presence of localized tenderness, and by the usual absence of conspicuous general tympany or limited distention of intestinal coils."

The affection may, however, prevent serious if not insurmountable difficulties in diagnosis, which only an exploratory abdominal incision can clear up; but on account of the grave implication of large and important nervous structures in the neighborhood of the pancreas these operative cases generally terminate disastrously.

The treatment of hæmorrhagic pancreatitis can be but palliative. By the time a correct diagnosis is arrived at, the damage has already been done; and, moreover, the action of therapeutic agents on the pancreas is, as yet, but little understood. It is only when the process ends in abscess, or gangrene, that surgical measures may be resorted to with a fair hope of success.

CATGUT STERILIZATION.—Senn's modification of Hofmeister's method is as follows: (1) The catgut is wound tightly on an ordinary large glass test-tube. (2) Immersion twelve to forty-eight hours in aqueous solution of formulin two to four per cent. (3) Immersion in flowing water at least twelve hours to free the gut from the formulin. (4) Boiling in water from ten to thirty minutes. Ten to twelve minutes is amply sufficient, as all microbes and spores are killed by exposure to boiling heat for that length of time. (5) Hardening and preservation in absolute alcohol containing five per cent. of glycerin and one-tenth of one per cent. of corrosive sublimate.

After boiling the deformed catgut for twelve to fifteen minutes it is cut into pieces of desirable length, tied into small bundles containing from six to twelve threads, when it is immersed and kept ready for use in the following mixture: Absolute alcohol fifty, glycerin fifty, iodoform (finely pulverized) one hundred. The alcohol dissolves part of the iodoform. The bottle containing the catgut should be closed with a well-fitting glass stopper, and should be shaken well every few days to bring the dissolving iodoform in contact with the threads. The catgut can be kept in this mixture for any length of time without losing its strength. One of the valuable properties of iodoform applied to a recent wound is to diminish the amount of primary wound secretion. It does not destroy pus microbes, but inhibits their growth.—*The Medical Review of Reviews.*

SURGERY.

IN CHARGE OF

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THE PROBLEMS WHICH MOST PERPLEX THE SURGEONS.

BY ROSWELL PARK, A.M., M.D.

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(Concluded.)

Certainly the appearances in epithelial cells which have been irritated by coccidia are quite analogous to those presented by cancer cells. The effect of the intracellular growth of coccidia is to produce a hypertrophy, especially of the nuclei, which often assume a volume greater than that of the original cells, only to later completely atrophy. In other words, hypertrophy precedes degeneration. This is true of the majority of cancer cells as well. It is not alone that the parasitic nature of certain bodies found in cancer cells is insisted upon by some and denied by others. It is also true that abnormal cells develop side by side with normal, that nuclei are frequently fused together, that protoplasmic filaments are compressed by cells which have not become keratinized, and that from this series of changes result nests of epidermic pearly bodies whose constitution and appearance are abnormal. This is particularly true when the transformation of young epithelium into horny cells takes place centripetally instead of centrifugally. It is very difficult to explain the appearances brought out by Soudakewitch, who fixed his tissues in osmic acid and colored the coccidia with logwood, or, after fixing by Flemming's solution, found by means of the ordinary aniline stains that they took on a color different from that of the cellular elements.

Two Russian observers, Sawtschenko and Podwyssowski, have done a large amount of work in this direction, which has partly failed of recognition because of its inaccessibility in their language. The former has found that those bodies which he considers to be sporozoa of cancer have no proper membrane, their protoplasm being limited only by the vacuoles in which it is more or less free, it often happening that it is resolved into that of surrounding cancer cells. In its adult form their parasite is re-

gular and rounded, granular in protoplasm, and more dense than that of the neoplastic cells; its nucleus plain, round, with chromatic meshes. The nucleus is decomposed into shreds, as sporulation proceeds, each of which particles becomes surrounded with protoplasm to form a new spore, which in time forsakes the cell in which it has thus been developed to invade others and spread the lesion. These characteristic appearances should be looked for at the margins of tumors where the tissue is young and the process active, instead of in the central portions where nothing is going on but degeneration. Under the influence of these recent researches of Sawtschenko the parasitic theory, at first considered so seductive and a little later so disappointing, becomes again the subject of renewed interest. By some such theory alone can miliary carcinomatosis be explained.

The common solitariness of cancer invasion in man is frequently emphasized as an argument against the parasitic theory. As the disease has been more carefully studied, it is now universally conceded that cancers may originate by multiple foci, while such conditions as general carcinomatosis and sarcomatosis, corresponding so perfectly to miliary tuberculosis, seem to establish that the disease processes not only disseminate similarly, but both have living agents for their primary causes. Not much comfort for either party can be derived from the fact that multiple and widely different neoplasms may be met with coincidentally. Thus sarcoma and carcinoma may be progressing in the same patient at the same time, while either may be connected with or be independent of syphilitic or tuberculosis disease. Nor can anything really reliable be yet learned from a source which, did it exist, would crown all others by its validity, for it must be acknowledged that attempts to inoculate cancer have been abortive in at least ninety-nine per cent. of instances. There is much reason for going over all this ground again, and so far improving upon previous experiments as to transplant tissue from the patient into the nearest possible like tissue of the animal. The old experiments made by Alibert and others were never successful, nor is it known that any surgeon has ever inoculated himself with cancer during an operation. There are but few authentic instances of transmission to the husband from cancer of the uterus. Still, about the mouth and perineum, especially where mucous surfaces lie closely in contact with each other, there is much reason to think the disease has been spread from one part to another. Nevertheless, experimental auto-inoculations have almost all failed, in spite of the fact that eroded surfaces do become infected by constant contact with discharge from cancerous sores.

Morau reported, in 1885, the inoculation of fragments from an epithelial cancer of a white mouse into ten other mice of the same kind, with formation of cancerous nodules to eight, which themselves were used for the inoculation of yet other animals, and with success. But he did more than this; he placed healthy mice in cages over a pan containing turpentine and camphor, by which they were kept free from insects and remained in perfect health. In other cages he placed healthy mice along with bedbugs taken from the cages of cancerous mice, and observed that after a few months all the animals infected with these insects were suffering from cancer.

The germ theory of cancer has assumed among certain Italian observers the form of a yeast theory, *i.e.*, it has been ascribed to the presence of blastomycetæ, and organisms of this kind certainly have been cultivated as coming from malignant tumors. Nevertheless, inoculation experiments with them have not yet been completely successful.

In a paper presented before the eleventh congress of Italian surgeons in Rome, October of last year, Roncali summed up our present knowledge with regard to the etiology of cancer briefly as follows :

1. In the cell protoplasm and the connective tissues of cancer are found bodies, not of intrinsic but of extrinsic origin.

2. These are in appearance similar to the coccidia which have been found in the cells of epitheliomata and sarcomata.

3. They are morphologically identical with blastomycetes found in animals which have been inoculated with pure cultures of organized ferments, and resist acids and alkalis as do experimental blastomycetes. They occur only in malignant growths in mankind; in such growths they are found only at the periphery where growth is still active, and not in the centre where degeneration has taken place. They are situated either in the cell protoplasm or between the fibres, rarely in the nuclei. They stain in the ordinary fashion, and can often be obtained from tumors both in man and in animals, and can be grown in pure culture. When these cultivated products are inoculated they force themselves into the cells and into the fibres, producing the same appearances as in those tumors in which they are naturally found. They moreover show the reaction of cellulose, which is a proof that they are not a degenerative product. Moreover, it is known that certain blastomycetes when inoculated produce hyperplastic rather than inflammatory changes.

Nevertheless, Roncali did not consider the parasitic nature of cancer to be definitely determined. It is of interest to know that Maffucci and Sirleo had found similar bodies and formed conclusions which were in no essential respect different from those of Roncali. They were somewhat inclined, nevertheless, to suspect that the blastomycetes might be present as the result of a secondary infection rather than as a primary caustic agent.

Whatever there be to the germ theory of cancer, it meets with this additional difficulty, that it is even to day almost impossible to state just what tumors should be considered malignant and what not. The adenomata which develop so frequently in the mammæ, the ovaries, the liver, and kidneys, seems to be peculiarly liable to subsequent malignant degeneration, while the frequent recurrence of adenoma of the breast is as well known as its conversion into carcinoma. Whether this conversion is due to infection or not is another thing to be established. The dissemination of adenomatos and papillomatous masses around the inner surface of the peritoneum, or along ordinary paths, by way of the lymphatics or vessels, is another feature of malignancy which deserves further investigation. Is this dissemination by implantation, by infection, or by what? Certainly dissemination of normal epithelium is common and is not known to produce cancer. Klebs concludes that an embryonic condition of a part predisposes it to tumor formation, but that the real malignancy

of tumors is due to a modification of their cells. The mere presence of cancer cells in a part seems to stimulate the surrounding tissue to growth in an altogether inexplicable way. According to Klebs, the principal change in an epithelial cell which is becoming cancerous is hypermitosis, which itself depends upon hypernutrition. It is characteristic of malignant growths that karyokinesis becomes both exaggerated and irregular, the epithelial cells being fed by the leucocytes, while the membrane of the nucleus becomes thinner, showing the process going on within to better advantage. Characteristic also is it that metamorphosis of the nuclei and formation of new nuclei follow each other in the same cell. Klebs views the cancerous process there as going through the following stages: first, chronic irritation or active inflammation induced by mechanical, chemical or bacterial agencies; this is followed by the emigration of leucocytes and the progressive development of other cells, which have lost their faculty of normal cell reproduction because of hypermitotic activity. He suggests as a remedy to use inhibiting substances possessed of negative chemotaxis, by which the leucocytes should be repelled and hypernutrition prevented. He thinks that possibly the toxins of erysipelas have some such power.

Williams makes what at first sight might seem a strong argument against the parasitic nature of cancer, by showing that in all other infectious lesions, say among the infectious granulomata, there is an identity of structure and arrangement always visible, whereas in cancer of different organs or tissues the widest differences of microscopic appearances are met with. This argument can be offset, however, by another still stronger, to the effect that in true carcinoma at least, no new cells are introduced nor new tissues formed, save in the sense of being a reduplication of those already existent. On the other hand, in sarcoma there is an abnormal type of cell met with which has no business among the healthy cells of the body any more than has a giant cell containing tubercle bacilli. If, therefore, his argument is good in one way, it loses its force in the other direction.

The other side of this question is that which takes no note of parasites, considering the bodies or particles regarded as such by some to be new cell regenerations or artefacts, or else, if germs, as present only by accident. The evolutionist's view of cancer is not necessarily that of the comparative pathologist, though the latter may hold to the former's notions in this regard. My friend, Dr. Woods Hutchinson, our professor of this department, would summarize it about as follows: The evolutionary view of cancer began unconsciously in the famous theory of Conheim's "rests" or "*Schlummer-zellen*;" i.e., little islands or foci of cells, embedded in the adult tissues, which have retained a more primitive or unspecialized character, with its accompanying powers of independence of growth. Gradually, however, as the individuality and independence of the component cells of the body became more adequately grasped, pathologists began to realize that it was not necessary to imagine the presence of any undeveloped or embryonic cells, but that any adult cell had the power of relapsing to the primitive condition and initiating the neoplastic process. In fact, cancer, like all other neoplasms and the pro-

cesses of repair, came to be regarded as a reversion. That individual cells of all descriptions possess reproductive powers is clearly shown by the rapid multiplication of, for instance, the muscular fibres of the uterus during pregnancy, or the heart in hypertrophy, the lymphatics in anæmia, or the connective-tissue corpuscles in the healing of wounds. The reproductive processes from a biologic standpoint may be divided, according to their results, into, first, those in which the product is perfect, the daughter cells in every respect the equals of the parent cells; and, second, those in which this result falls short, the daughter cells being inferior in rank or vitality to the parent cells. Each of these is again divided into two—those whose products are useful to the body as a whole, and those which are not. So that we have four great processes of cell-breeding going on: (1) Those in which the new cells are perfect (true to type) and of utility to the organism, such as genuine hypertrophy, leucocytosis, etc. (2) Those in which the new cells "breed true," but are of no utility to the organism, as the benign tumors. (3) Those in which the new cells are imperfect, but of value to the body, as in scar tissue. (4) Those in which the resulting cells are of lower grade or vitality, and of no utility to the organism, as in sarcoma and carcinoma.

In fact, cancer is regarded as an abortive attempt of gland epithelium to reproduce itself, *i.e.*, a parody upon gland tissue. Its "sin," its essential pathologic character, lies in the fact that its cells breed with an utter disregard of the welfare of the body as a whole. Its danger obtains in that their offspring are so immature and degenerate as sooner or later surely to break down, decay, and poison the lymph current. Sarcoma is a similar process on the part of some mesoblastic tissue cells. Supposing this statement of the nature of cancer growth accepted, can evolutionary pathology offer any explanation for the setting up of this process in any particular group of cells? The evolutionist believes that it can. The one factor which is universally admitted as predisposing to cancer is senility. It is emphatically a disease of middle or old age.

Just as soon as the food supply begins to be cut off from the peripheral organs and tissues, the liability to this process is immensely increased. The same thing will be found to be true of the organs most commonly attacked. In a large majority of cases these will be found to be either functionally senile or ancestrally either in a condition of progressive atrophy or of marked instability. As instances of the first class are the mammary glands and uterus, which after the failure or disappearance of their function become the site of nearly eighty per cent. of all cases of cancer in the female. As an instance in which both predisposing factors coexist, we have the lips and tongue, in which both the atrophic changes consequent upon the loss of the teeth and "border-line" character of the epithelium, poised between mucous and cutaneous possibilities, as it were, unite to render its cancer record next in darkness. For ancestral instability few localities can compare with the pylorus, the old gizzard region, and here again we have a most frequent site of carcinoma. All of these facts seem dependent upon one common biologic law, and that is that lowered nutrition, whether individual or ancestral, means increased liability to cancerous change; that just as soon as any organ or tissue finds

itself being slowly cut off from its nutritive supplies, it is apt to begin breeding on its own account, like plants running to seed in poor soil, in a desperate endeavor to hold their own—in short, that cancer is literally a “rebellion of the cells,” as Jonathan Hutchinson has termed it, and, like many another rebellion, is chiefly provoked by starvation and want.

It will be seen, then, that the problem of the nature of cancer and of its cure is a most complete one, and must be studied from many sides. Permit me to indicate in some degree, and yet at present in a purely suggestive way, how we may profitably approach it.

First of all from the statistical side; this must include a careful history of each case, including that of the family. One of the difficulties met right here is that of getting an accurate or reliable family history. The influence of alleged injuries or previous inflammation of the part involved must be carefully weighed. We need to make out especially whether only a cancerous diathesis can be inherited, or only the active disease, or both; for instance, a woman aged forty-five develops a cancer—is her daughter of twenty years of age any more liable than any other girl, or not?

We need next to study it by localities, especially those of reasonably fixed proportions, as in the rural districts, in order to know whether it is really or only apparently on the increase. Moreover, it should be established, if possible, whether the numerical increase is due solely to more accurate diagnosis or has an actual basis of reality. The question of so-called cancer houses must be carefully studied, and positive evidence secured. In such instances there must be a careful scrutiny of evidence to show whether this is due to anything more than mere coincidence.

Next we should determine in what race and under what social conditions the disease is most prevalent. This will also necessarily bring up the question of dietetic habits. Is it more prevalent, for instance, among brain workers or other wage earners, among vegetarians or meat eaters?

A study of localities must comprise also an estimation of the physical environment—what the climatic conditions, what the geological formation, what especially the drinking-water supply. Not that this is so important for a single small locality; but if it be shown that where the disease is prevalent similar physical conditions exist, it means a great deal accomplished toward the final explanation for which we seek.

Besides the statistical study of the disease and the external conditions surrounding cancer patients, the problem must also be attacked by a careful laboratory study of fluids and tissues. First, to establish whether the disease is primarily local or systemic. Such a study is, of course, inseparable from the other examinations to be immediately spoken of. Excretions, especially the renal, must be carefully investigated; among other reasons, to ascertain whether the diminution of urea usually noted in these cases is to be regarded as among their causative or consequential features. The blood must be studied with the spectroscope as well as by all the other modern means of examining this fluid. Its hæmoglobin and other physical constituents must be carefully estimated, and its corpuscles frequently examined. The presence of sugar or of peptone in the blood must also be as frequently determined. Then the tissues of the tumor

itself must be carefully investigated, chemically, histologically, and bacteriologically. The whole question of inoculability of cancer fragments must be again gone over most carefully, with particular effort to imitate natural and original conditions as nearly as possible. If cancer really be a parasitic disease, it is only a question of time when the parasite may be cultivated in pure culture and inoculated with success. It does not follow necessarily that any of the culture media now in use will suffice for this purpose; to settle this question we must learn how to cultivate sporozoa and all the other reputed parasitic growths outside of the body, and at first without any reference to those whose agency in this direction we suspect.

Finally, the problem must be attacked also from the side of comparative pathology, *i.e.*, from the evolutionist's and embryologist's standpoint. To this effect we must begin with the lowest forms of life, and determine the causes which operate to produce neoplasms in them. We must begin even lower down in the vegetable kingdom than those trees which produce tumors (*xylomata*) as the result of climatic conditions or parasitic vegetables or insects. We must then look upward along the scale, in order to determine whether tumors, including cancers, are entitled to be regarded as reversions to earlier and simpler cell forms, or simpler types of cell arrangement, or whether it can be shown that they never assume malignant characteristics save when provoked thereto by the irritation of parasites.

All of this means not merely a painstaking and almost discouraging task from the outset, but it means more than can be accomplished by any individual working alone. It requires the collective efforts of numerous men versed in all the branches of biological study, and possessed of such training in logic as shall permit of no false deductions; it is, in other words, an enormous task, but not necessarily a hopeless one. If any enquiry into that which affects man's health and welfare deserves to be undertaken by the State or by the government at large, it certainly is this. I am far from making light of the studies into which the general government has entered regarding diseases of plants and animals, the establishment of bureaus of animal industry, the detection of trichinosis, etc., by all of which great benefit has accrued to our people generally and the spread of disease been notably limited. Nor would I discourage in any sense the publication of a State's report concerning the mineralogy, geology and natural history of its territory, by which knowledge of greatest importance is collected only to be suitably distributed. But I claim that we have in this matter of cancer to deal with a disease of horrible nature, of almost inevitable fatality, of common occurrence, which is certainly on the increase, and that at present we are helpless to combat it as we ought. The people naturally look to us both for explanation and for relief; we do the best we can, but this is often very little. If the lives of our cattle are of value, how much more so the lives of our citizens. In what more humane or, from the merely financial aspect, in what more satisfactory work could a government engage than by the employment of experts competent for this work, endeavoring, no matter how long it may take, to settle this problem? When the real cause or

causes of cancer are known and understood, then, and not until then, can a rational, early, non-operative and successful treatment be applied.

It would hardly be fair to dismiss this most gloomy and unpromising of all the problems which present themselves to us, without asking, in conclusion, whether any measure, drugs or otherwise, can be regarded as either certain or having any efficacy as against this dread disease? To this, first of all, I would say that in a great majority of cases cancer appears to us as a local affection, which, could it be reached early enough and attacked radically enough, might be extirpated. There is no question but what early and extensive operations in select cases give permanent relief. To bring about this happy result, however, requires the lucky coincidence by which an intelligent patient goes early to an intelligent physician, and has his or her trouble recognised at a time when sweeping operation can be made with prospect of success. It requires also that the disease shall be located in some accessible part of the body, in order both that diagnosis may be more exact and operation justifiable—except those trifling growths upon the surface which may be removed by caustic pastes, if one prefers such a course. The treatment by cancer pastes, especially the removal of large masses by this means, is alike unscientific, barbarous and damnable. It bespeaks the meeting of two cowards—the patient who is afraid of the knife, and the pseudo-physician who is afraid to use it. Could the real truth be known about institutions where this method is practised as a specialty, it would be far more discreditable both to intelligence and to the honesty of those who manage them than is generally appreciated.

But what would be said of operations in hopeless cases? I maintain that one has a right, and a duty to the patient as well, to operate in absolutely hopeless cases for either one or more of the four following reasons, providing the patient willingly consent. These are: (1) The relief of pain; (2) the avoidance of constant hemorrhage; (3) the affording of a temporary respite, and (4) the removal of foul sloughing growths, which are an offence alike to patient and family. In cases coming under one of these heads, the propriety of an operation may be submitted to the judgment of intelligent people, and to the unintelligent the choice of that which one may think well to advise.

A study of the causes of cancer being so inseparable from a discussion of the cell doctrine, one cannot but feel that if there be drugs which influence cell nutrition and cell activity, it is among them that we must look for internal remedies which may have a palliative or curative effect. First among these I place the time-honored remedy, arsenic, which, so far as I know, can vie with one of the latest aspirants to honor, namely, nuclein, for which we shall be ever deeply indebted to Vaughan and his colleagues in the University of Michigan—these being the two remedies which more than any others possess these properties. We certainly lack exact studies demonstrating their power in this direction, but this is another of the investigations to be taken up when this ideal research laboratory, at which I have hinted, is formally organized. It is difficult to say positively whether any true cancer has ever disappeared completely under the influence of either of these remedies. Nevertheless, I have personally seen remarkable retrocession of large and bulky tumors after the

use of arsenic internally, and most encouraging reports have of late come from those who have been using nuclein for this purpose. Still, it is well known that spontaneous resolution of tumors is believed in by not a few men of greatest eminence, while for myself personally its possibility seems to have been clearly demonstrated in more than one case under my observation. Certain it is, however, that in some instances one must allow this spontaneous retrocession to have occurred, or ascribe the wonderful change to the influence of certain drugs. For my own part, also, I have such faith in the virtues of arsenic that I prefer to keep all my patients more or less steadily under the influence of the drug in some form for months after operation, while it has seemed to me that I have obtained the best results by using a combination of arsenic, gold and mercury, in connection with the three haloid elements, chlorine, iodine and bromine. Whether the benefit which in my observations of this compound has really occurred is due to the influence of one or more of its components upon cell activity, or to the fact that the combination certainly serves as an ideal internal antiseptic, I will not attempt to say. At all events, there is more rapid restoration or hæmoglobin, disappearance of the anæmia due to poikilocytosis, as well as of the leucocytosis which is a feature of the cancerous cachexia, than I have known of after using any other drug.

Lastly, without stopping to mention any of the other drugs recently or in time past lauded for this purpose, all of which have so far proved disappointing, I would only mention the modern treatment of cancer by the use of toxins of erysipelas. Having experimented diligently with the toxins and without other effect save to prove their general inefficacy, I am compelled to say that in most respects the treatment has proved a disappointment, the results in most of the cases under my observation having been negative; while for every instance in which more or less benefit has resulted, I could bring two or three to bear in which positive injury has resulted. It may be, however, that we are on the right track in this matter or near it, and need mainly to enlarge our observation and still further use our reason.

HYSTERICAL SPASM OF THE DIAPHRAGM was the diagnosis made in a girl, ten years of age, presented to the Vienna Medical Club by Karl Berdach. The patient had for twelve days uttered a sound resembling the word "so" at intervals of less than a minute. The affection first appeared after the girl had been scolded. The laryngoscopic examination was negative. The author was acquainted with only one similar case, that of Seeligmuller. Kassowitz does not think that these cases, which were formerly classed with chorea magna, and later were called "chorea laryngis," are so very rare. As regards prognosis, these attacks generally cease of their own accord after the occurrence of some extraordinary incident; hypnotic suggestion might also possibly be of service.—*Pædiatrics*.

MEDICINE.

IN CHARGE OF

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WILLIAM BRITTON, M.D., 17 Isabella Street.**FIVE SUCCESSFUL CASES OF GENERAL SUPPURATIVE PERI-
TONITIS TREATED BY A NEW METHOD.**

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Recovery following laparotomy for purulent peritonitis is unfortunately of sufficient rarity to excite interest whenever it occurs. My object in making this report to the Society is two-fold; first, to record five successful cases of laparotomy for general suppurative peritonitis, all treated by the same method; and second, to describe briefly the method itself. The principle involved is not a new one; only in the manner of carrying it out is there any originality claimed.

Since the appearance in 1877 of the classical work of Wegner, and later that of Grawitz and others, it has been known that the healthy peritoneum is capable of disposing of a considerable amount of infectious material. J. G. Clark, in a recent article, reviews the literature of the subject, and gives the conclusions reached by the experimenters in this direction. All agree that the peritoneum is able under favorable conditions to take up a relatively large amount of infectious material and dispose of it effectually. These observers were dealing with a more or less healthy peritoneum. On opening the abdomen of a patient suffering from general suppurative peritonitis, however, we have very different conditions with which to deal. The observations of Pawlowsky would indicate that the lymph channels leading from the peritoneal cavity are choked with infectious bacteria and inflammatory products of purulent peritonitis, and that thus the efficiency of the peritoneum would be greatly impaired. Our observations clinically seemed hardly to bear this out.

The question that suggested itself to our mind was this, whether or not the peritoneum, even under these most favorable conditions, still retained its absorptive power. It seemed to us, from our experience in operating upon such cases by the methods heretofore employed, that they were inadequate and did not remove a sufficient quantity of the exudate, but left the peritoneum little better off than before. With this idea in mind we devised a plan of treatment which, so far as we know, has not been employed elsewhere.

The steps of the operation are as follows: Make a sufficiently long incision to admit of easy access to all parts of the peritoneal cavity. Quickly withdraw the coils of small intestine from the peritoneal cavity, beginning with the worst coils first. Remove all, or as much as is necessary, of the small intestine and place it outside the abdomen, covered with warm gauze or towels, thus practically disemboweling the patient for the time being. Then thoroughly and systematically wipe out the peritoneal cavity with large pledgets of gauze wrung out of hot salt solution, paying particular attention to the pelvic portion. In some cases it may be well, in addition, to flush out the cavity with warm salt solution, but this is rarely necessary.

Next the small intestine should be systematically examined loop by loop while still outside the abdomen, and rendered microscopically clean by wiping with gauze compresses wrung out of hot salt solution. It is necessary to wipe with considerable force at times, in order to remove adherent flakes of partly organized lymph. It should be done thoroughly and conscientiously, however, as upon this depends, we believe, in great measure, the success of the operation. It facilitates the cleansing process, as well as lessens the shock of the operation, if the wiping of the intestinal coils is carried on under a constant irrigation of warm salt solution.

After being cleansed microscopically of all foreign material, pus, feces, lymph, etc., the intestine should be replaced in the abdomen—the worst or sutured coil being the last, or most superficial, in order that it may be the better drained by being packed about with gauze, if necessary.

The abdominal wound is then tightly closed, leaving just room enough between two sutures for the gauze drain. If there are any evidences of distension or pain the abdomen should have the Paquelin cautery thoroughly applied, and the bowels moved early by calomel in broken doses, followed by salts and a turpentine enema.

It is not claimed for this method that it will cure every case of general suppurative peritonitis. We believe, however, that a larger percentage of cases will recover after this method than any other with which we are familiar.

To insure success with any method it is essential that the operation should be performed within a few hours after the perforation has taken place. This is well brought out in the very interesting series of experiments on dogs made for me by Messrs. Elting and Calvert of the Johns Hopkins Medical School, a report of which is subjoined.

Five cases have been operated upon by this method up to date, all of which have recovered. The first case, a case of perforating typhoid ulcer, has already been published, and hence only a very brief abstract of the history will be given here.

CASE I.—Male, aged 47, on about eighth day of mild attack of typhoid developed symptoms of perforation. Entered hospital 14 hours later and was operated upon immediately. Peritoneum everywhere intensely congested, roughened and dull, and covered with flakes of plastic lymph. Considerable amount of turbid purulent fluid in abdominal cavity. Perforation in ilium about 14 inches from ileo-cæcal valve. Fecal matter exuding from opening. Peritoneum cleansed in the manner described, gauze drainage. Recovery.

CASE II.—G. W., a male, aged 20. Saw patient for the first time, November 24th, 1896, in consultation with Dr. Barringer, in Charlottesville, Va. Patient gave history of four previous mild attacks of appendicitis, from which he had promptly recovered. The night before he had eaten very heartily of apples. He was awakened about 3 a.m. with severe abdominal pain, cramp-like in character. At about 6 a.m. Dr. Barringer was called. He stated that at this time, three hours after the beginning of the attack, the patient presented the classical symptoms of peritonitis. When I saw him, 24 hours later, he had a temperature of 102° and a pulse of over 100, and from the first had suffered intense pain, which was controlled only by morphia hypodermically. He had had nausea and vomiting all day. Examination of the abdomen showed slight distension and great rigidity of the abdominal muscles. A slight tumefaction could be made out just to the inner side of the anterior superior spine of the ilium on the right side. Tenderness very marked. Immediate operation advised and agreed to. Incision 5 inches long in right linea semilunaris. On opening the peritoneal cavity the intestinal coils in the right lower quadrant of the abdomen were found to be congested and dull and covered with flakes of adherent lymph. Elsewhere the intestinal coils were found to be congested, but not otherwise much changed in appearance. The pus, of which there was perhaps 200 cc., was not walled off, but everywhere present in pockets between the adherent intestinal coils. The appendix was readily found. It was closely adherent to the pelvic brim on the one side and the cæcum on the other. Its distal end was swollen and distended to the size of my thumb, perforated and gangrenous over an area about as large as a five-cent piece. Appendix was ligated and excised, and stump covered with peritoneal cuff and suture. The peritoneum was treated in the manner above described. Recovery.

CASE III.—This patient was seen first on December 14th, 1896. His history is in brief as follows: R. S., male, aged 33 years. Has had no previous attack. The night before he was taken sick he attended a banquet and ate heartily of solid indigestible food. He was attacked with severe abdominal pain about 3 o'clock the next afternoon. The pain at first was general and cramp-like; nausea and light vomiting during the night. Morphia was necessary to relieve him. The next day he was unable to get up. Toward evening his physician gave him a cathartic, after which the bowels moved 8 or 10 times in quick succession. The next morning the pain had shifted to the right side and was severe. He received a hypodermic of morphia and got on fairly well until about 6 p.m., about 60 hours after the onset of the attack, when he was taken with a sudden severe pain in the lower right side of the abdomen. The pain for a time was excruciating at the base of the penis. Vesical and rectal tenesmus marked. When I saw him, about 4 hours later, in consultation with Dr. Reiche, he had a temperature of 105° and pulse of 150, profoundly collapsed. I have never seen such a hard and retracted abdomen as he presented. His condition appeared grave. Immediate operation advised and consented to.

Incision about 5 inches long, in right linea semilunaris. On opening abdomen the intestinal coils were found not to be distended but consider-

ably congested. Beginning in the right lower quadrant there was found a considerable amount of thin pus containing flakes of lymph. This condition extended over into the left side, down into the pelvis and up into the hypogastric region. The appendix was found to be gangrenous and perforated, and was removed. The toilet of the peritoneum was made in the manner already described, by disemboweling and vigorously scrubbing the parietal and visceral peritoneum until microscopically clean. The intestinal coils were then replaced, a gauze drain inserted, and the abdominal wound closed except a small opening for the drain. He made an uninterrupted recovery.

CASE IV.—M. B., boy, aged 10. Operation by Dr. J. C. Bloodgood, January 7, 1897. Five days before admission to the hospital was struck in the abdomen by the fist of a playmate. Next day felt severe pain in the right iliac region. This progressively increased for three days, when vomiting began and the pain became general. Two days later was brought to the hospital, when his condition was found to be in brief as follows: Temperature 101°, pulse 128 and fairly good. Slight abdominal distension. Muscular spasm marked on right side, present but less marked on the left. General abdominal tenderness. Under ether a definite tumefaction could be made out in the region of the right kidney. This proved to be an abscess behind the cæcum, extending from the iliac fossa below to the liver above, and in this cavity was the diseased appendix. There was found no walling off of this from the general peritoneal cavity. The entire pelvis was filled with yellow pus and all the intestinal coils were covered with flakes of fibrin. The stomach and spleen were not seen, but the surface of the liver looked exactly as if it had been covered with yellowish-white paint. The appendix was removed and the entire abdominal cavity thoroughly wiped out with gauze pledgets wrung out of salt solution. The exudate was scrubbed off the liver's surface, after which it looked simply congested. A gauze drain was inserted and the abdominal wound partly closed. He made an uninterrupted recovery. Cultures and cover-slips from the peritoneum showed colon bacillus and a coccus (not differentiated).

CASE V.—R. S. P., aged 9, a schoolboy, entered the Johns Hopkins Hospital, Feb. 26, 1897. He had always been healthy except for measles, whooping-cough and chicken-pox.

Family history good, except remote cases of tuberculosis on both sides. Just 48 hours before entering the hospital first complained of pain in abdomen. Three hours after had an attack of vomiting. Pain in abdomen was at first general, but in a few hours became localized in the right iliac and lumbar regions. After about 24 hours the pain lessened somewhat, and he sat up for a little while, but shortly after pain and vomiting returned with increased severity. A physician saw him after about 36 hours and gave him calomel in broken doses. His bowels moved twice. His condition did not improve, and by advice of his physician was brought to the hospital at 8 p.m., 48 hours after the onset of the attack. His condition then was as follows: Face flushed and anxious. Pulse 126; temperature 102.8°; res. 56, and entirely thoracic; abdomen generally distended and tender, especially in right iliac fossa, where the

tenderness is extreme, and muscle spasm very marked. Pain is most marked here also. Liver and spleen not palpable. Liver dullness on right corresponds about to costal border. Percussion over right iliac and lumbar regions shows dullness; tympanitic over left side. Heart normal. Fine moist rales over bases of both lungs. No history of any similar previous attack.

Diagnosis.—Perforating appendicitis with beginning general peritonitis. Immediate laparotomy advised and agreed to. Ether. When thoroughly anesthetized, a small, hard mass, somewhat movable, could be felt just over the middle of Poupart's ligament. An incision about 15 cm. long was made parallel to and over the right linea semilunaris. After exposing the peritoneum and before opening it several bubbles of gas could be seen free in the peritoneal cavity. On opening the peritoneum a considerable amount of thin, cloudy sero-purulent fluid escaped and some gas. The mass felt before was found to be the appendix with a roll of omentum adherent. The intestines, especially the cæcum, were distended and congested, and covered with flakes of fresh fibrinous exudate. The congestion was most marked in the immediate vicinity of the appendix.

The appendix itself was superficially placed and freely movable, not walled off, but had a portion of omentum adherent. It was rather long, and curled upon itself, with a constriction about the junction of its proximal and middle thirds. It contained two concretions, the larger of which was engaged tightly in the constriction, and from this point to the tip the appendix was gangrenous and softened. A small perforation was present at the distal end of the date-seed like concretion. There had been an apparent attempt of the omentum to surround the entire gangrenous end of the appendix, but it had not quite succeeded. The appendix together with the adherent omentum was ligated and excised.

Pelvis was found to be full of pus, and the peritonem treated as above. He made a rapid and complete recovery.

Bacteriological examination of the peritoneal exudate showed the presence of streptococcus, staphylococcus, and bacillus coli communis.

NOTE.—Since reading the above article I have operated upon one additional case of general peritonitis. The patient, a young woman, was *in extremis* at the time of the operation, which was undertaken simply as a forlorn hope. This operation was secondary to one performed several days previously by another surgeon for appendicular abscess. There was found present a general peritonitis, with much plastic lymph covering the greatly distended and adherent coils of intestine. There was very little purulent fluid in the abdomen. Her pulse was very rapid and thready, and her temperature had risen several degrees. After the operation she was placed in a continuous bath, which added greatly to her comfort. The operation seemed to prolong her life, as she lived about thirty-six hours following it.

OBSTETRICS AND GYNAECOLOGY.

IN CHARGE OF

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THE THERAPEUTIC APPLICATION OF CHLOROFORM IN LABOR.

John N. Apsbur, of Richmond (*Virginia Med. Semi-Monthly*, March 12th, 1897), says that while the administration of chloroform in labor has become almost a matter of routine, and is generally considered safe, a careful observation for many years has tended to make him question its utility in many cases, and to convince him that in some cases it actually adds to the peril, and prolongs the suffering. It should be remembered that labor is a physiological function, becoming pathological only when abnormal conditions exist, such as malformed pelves, bad positions, or deformities of the child, or when interference in behalf of the mother or child becomes necessary. Such cases belong to the domain of the surgeon, and the question of chloroform is simply the necessity for an anæsthetic. Or, again, in cases where there is danger to the mother from convulsions caused by systemic conditions. But the object of this article is not to concern itself with such cases, but with so-called normal labors. These questions naturally arise: in what case should chloroform be administered? at what stage of labor? what dangers arise? and at what stage? the best means of combating them? and, finally, *is it justifiable* to administer chloroform in natural labor progressing with satisfactory rapidity?

In order to answer these questions satisfactorily, the nature and effects of chloroform narcosis must be understood. Chloroform diminishes the excitability of the muscular system and its capacity for work. It interferes with oxidation of the blood, and thus becomes toxic to the foetus. In addition to the cases in which surgical interference is demanded we may include cases in which the pains are nagging and exhausting, also cases of rigid os with great nervousness. As to the time of administration, it should never be given until the latter part of the second stage of labor, and should be discontinued as soon as the occiput has passed the ostium vaginae. But the most serious question is the dangers arising from the use of chloroform. Diminution of muscular excitability renders the pain less potent, and there is greater danger of hæmorrhage due to uterine inertia. Subinvolution, with all the ills that follow in its train, is almost inevitable. Not only so, but labor may be almost suspended,

making an instrumental labor a necessity. The interference with the oxidation of the blood without doubt increases the number of still-births. Nor are these the only dangers. Though few deaths are reported from chloroform in obstetric practice, yet undoubtedly many deaths occurring within forty-eight hours after delivery and reported as heart-clot, etc., may be due to the depression following the administration of chloroform. In cases where the uterine contractions persist, and the woman holds her breath to more efficiently "bear down," she is in a favorable condition for the occurrence of epileptiform syncope if chloroform is being administered. Without exception, whenever chloroform is used, a full dose of ergot should be given as soon as the head is delivered. It is also well to give ten grains of quinine at the beginning of the second stage of labor. Belladonna or nitroglycerine may also be used. A hypodermic injection of atropine (gr. 1-120), or sulphate of strychnia (gr. 1-60), will add to the safety of the patient. In view of the dangers above mentioned, it is urged that chloroform should be placed upon the same platform as other drugs; never to be given as a routine practice; or, in response to the pleadings of the patient, and simply to diminish pain, but only when the indication in the case imperatively demands it.

A SERIES OF COMPLICATED LABORS; SHOULDER PRESENTATION; EXPULSION OF CHILD WITH HEAD DOUBLED UPON TRUNK.

Benjamin Edson (*Med. Council*, Phila., Feb., 1897) says that, as a rule, complications in labor result from contracted or distorted pelvis, with small birth-canals and a large foetus, but an unusually large pelvis may cause complications as well. The case of Mrs. C., of Brooklyn, illustrates this. She is twenty-four years old, weighs over 200 pounds, and has a uniformly enlarged pelvis. She was confined in 1893 for the first time, a shoulder presentation: the child was still-born. The writer does not know the particulars of this labor, as the patient was not under his care then. In 1894 Dr. Edson was called in consultation, found the patient in labor, with arm and shoulder presenting at vulva. The child was turned and delivered, breech first; child still living. In September, 1895, Dr. Edson was called; found her in labor, with several hands and feet presenting. "After duly assorting them," she was delivered of twins at about six months of utero-gestation. They lived but a day or two. In June, 1896, she was again in labor. The doctor found the membranes ruptured, and the right arm presenting; pains almost continuous and strong. An attempt to replace the arm in the knee-chest position failed. An assistant was sent for, with the intention of giving chloroform. In the meantime, with the patient on her back, the doctor "balanced the child above the mother's pelvis." The pains became violent, the shoulder progressed rapidly, the head doubled upon the left shoulder and chest, and head and chest were delivered *en masse*, the breech following. The child weighed ten and one-half pounds. Both mother and child did well.

It is hardly necessary to say that the mother's pelvis was spacious. Her abdomen was extremely pendulous, extending, when in a sitting position, beyond and below her knees. Most writers admit the possibility of such a mode of delivery only when the child is small or immature and the birth-canal unusually large. In this case the child was at full term and well developed, was born alive and is still living.

UNUSUAL CASE IN MIDWIFERY PRACTICE.

Bernard Loughrey, of Melbourne (*Intercolonial Med. Jour.*, of Australasia, Dec., 1896), reports a case of labor, interesting because of the unusual number of complications.

The patient was thirty-two years old, had had five children and two miscarriages, had been curetred after each miscarriage. In September last, when seven months pregnant, she was taken with severe hæmorrhages, coming on without warning; these persisted, at intervals for two days, when labor pains commenced, and Dr. Loughrey was called. On examination, he found the cervix partially dilated, and a complete placenta prævia, which was detached from the os for a short distance; the pains frequent but ineffectual. For over an hour it was impossible to separate the placenta sufficiently to rupture the membranes. But at length one side was detached, and the membranes ruptured. A breech presentation was delivered as rapidly as possible, the child being livid and apparently lifeless. After twenty minutes of artificial respiration the child was breathing well, and an attempt was made to express the remaining portion of the placenta. The uterus was unusually distended, and no impression could be made upon it. On inserting his hand in the uterus to peel off the placenta, he found another child with unruptured membranes in utero. After removing the first placenta and membranes, the second membranes were ruptured and a second child appeared, with foot and hand presentation. This was delivered alive and well, the placenta quickly following. The children, both males, were wrapped in cotton and placed near a fire, but, owing to a sudden change in temperature, both children died the next day. The uterus contracted promptly, and recovery was uneventful.

AN UNUSUAL CASE OF TUBAL ABORTION.

J. Bland Sutton (*The Lancet*, February 13, 1897) reports a curious case of tubal abortion, which demonstrates the fact that, under certain conditions, tubal abortion can be differentiated from tubal rupture by clinical signs. A married woman, aged forty-one years, the mother of four children, was last pregnant in May, 1886. From that date she menstruated regularly until June, 1896. In that month, and in July, August and September following, the usual menstrual flow was on each occasion very scanty, merely a "slight loss." July 28th, the woman had severe pain in the lower part of her abdomen, lasting three hours. August 14th a sim-

ilar attack occurred. September 15th she again suffered great pain, which lasted five days. The pain diminished in severity, but did not wholly disappear, and she applied at the Chelsea Hospital for Women for relief, where she was examined by Dr. Arthur Giles, who detected a swelling in the left half of her pelvis. From the history and the physical signs, he considered the case as tubal pregnancy, and very probably tubal abortion. The writer found, on examination, the left half of her pelvis occupied by a semi-solid swelling, which extended into the false pelvis, and could be felt above the brim. The cervix was patulous. The uterine cavity was three and a half inches in depth. There was slight bleeding from the uterus. October 19th cœliotomy was performed. A uniform-shaped clot, about two and a half inches in length, was found in a fold of omentum; beneath it a second clot of the same shape, but much larger, was found, and beneath this in the recto-vaginal fossa a third clot of exactly the same shape, but twice the size of the preceding, was found, and also removed. A rounded, hard body was felt in the left tube. The tube, ovary, and adjacent parts of the mesosalpinx were removed. The right tube and ovary, being normal, were not disturbed. The patient made a quick and complete recovery. The clots were all uniform in shape; the exterior of each was laminated like the blood in the wall of a sacculated aneurism or in the sac of an old hæmatocele of the tunica vaginalis testis. The central parts of the clots consisted of ordinary coagulated blood. The hard body in the tube was a "mole," which on microscopic examination in cross-sections showed many chorionic villi. The ostium abdominale of the tube was widely patent, and the ampullary wall thick, succulent and *entire*. The case was, therefore, one of "incomplete tubal abortion," but peculiar in this respect: As the blood collected and distended the tubal ampulla it firmly clotted, and was then expelled, with pain, through the tubal ostium into the recto-vaginal pouch. The "delivery," so to speak, of each clot coincided with each attack of pain, in July, August and September.

The only recorded case in any way parallel is by Noble: that of a case of tubal abortion in which the blood clots in the pelvis "were coiled up as though they had been ground through a sausage machine." This was due to a continuous slow bleeding in the tube, the clots being forced out as they formed in a sausage-shaped mass.

The shape of the clot in the diagram of the writer is exactly that assumed by the ampullary section of the fallopian tube when in the condition of hydrosalpinx.

POWDER FOR CORYZA: The *Therap. Gaz.* gives the following:

R. Subnitrate of bismuth.....	1 drachm.
Powdered camphor	6 grains.
Finely powdered boric acid.....	3 grains.
Hydrochlorate of morphine.....	$\frac{1}{2}$ grain.
Hydrochlorate of cocaine.....	$\frac{1}{4}$ grain.
Powdered benzoin	15 grains.

This to be snuffed up the nose.

NERVOUS DISEASES AND ELECTRO-THERAPEUTICS.

IN CHARGE OF

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HYSTERICAL APHONIA.

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My apology for calling attention to a mere symptom is that hysteria presents such an endless variety of symptoms that one can hardly attempt to take them all together within the compass of one short paper. I invite attention to hysterical aphonia because, while it is not one of the most frequent symptoms of hysteria, it is one of the most conspicuous when present, and though in a large majority of the cases no very great difficulty is met with in attempting to diagnose it, yet there are cases which have baffled the general practitioner successfully for a number of years. I hope I may be excused if I briefly discuss this symptom somewhat as I would do if it were regarded as a disease, because I am accustomed to discuss medical topics in somewhat of a stereotyped way.

Hysterical aphonia has been pretty clearly recognized and described for a century at least; its etiological conditions are practically the same, of course, as are those of the disease of which it is a symptom, namely, hysteria.

In quite an extensive search of the literature of the subject, the youngest case that I have encountered was one occurring in a girl of nine, while the age of the oldest was that of a woman of seventy-four years.

In regard to the symptomatology and etiology, at least two fairly distinct types are found; first may be considered that type in which aphonia is merely an accompaniment of many other pronounced stigmata of hysteria, such as hysterical pains, hemianæsthesia, vomiting, etc., occurring either with or without any apparent exciting cause. In such cases it frequently happens that the aphonia is not entirely pure; that is, for hours together, when the other symptoms are most complained of, the patient may be unable to raise the voice above a whisper, but in the intervals may be able faintly to phonate now and then a word or syllable. The second or pure form of aphonia, however, is that in which this symptom occurs suddenly with or without an exciting cause, continues for a longer or shorter time, and constitutes the sole evidence of hysteria.

In the impure type the aphonia may be among the first symptoms to appear, or it may show itself only after symptoms have been present for weeks or even months. It may commence as a transient hoarseness, worse when the other symptoms are worse, or as hoarseness associated

with an ordinary cold; finally, complete or almost complete aphonia supervenes which may last from several days to several weeks, or even months.

In the pure type, as already stated, the aphonia usually develops suddenly, with or without exciting cause. For instance, the patient comes down to breakfast in his usual health and spirits, and finds, much to his surprise, that he cannot raise his voice above a whisper, or very rarely he may be entirely mute; or the symptom may develop suddenly as the result of a severe emotional shock. The influence of an emotional shock will vary directly with the susceptibility of the individual's nervous system at the time of receiving the shock. This point is of the utmost importance in estimating the influence of emotion in producing disturbance of any function of the nervous system.

Many of these cases recover spontaneously and even suddenly after a few weeks or months, with or without treatment; others remain uninfluenced by treatment, the symptom persisting steadily for years. To be sure, there are many mixed cases.

A great many methods have been enthusiastically put forward as successful in the treatment, more especially of the pure types above referred to, but in the last few years it has been pretty clearly demonstrated that they owed their success entirely to the influence of the suggestion with which they were accompanied; and in my opinion any method depends for its success upon the facility which it affords the patient for concentrating his efforts upon an attempt to phonate. Hypnotism has been successful in a number of instances, but not more so than the various forms of electricity, more particularly faradism, applied to the larynx, sometimes by a peculiarly shaped electrode applied internally, and at other times simply applied externally.

A method advocated by Oliver a few years ago attracted considerable attention and became known as his method, and has given excellent results. His plan was to pinch the posterior part of the arytenoid cartilages between the thumb and index finger, and thus produce an approximation of the vocal cords, at the same time vigorously shaking the larynx and calling upon the patient to make an attempt to phonate, assuring him positively of his ability to do so. At first only vowel sounds were attempted, and gradually the pressure and shaking were diminished, until the patient was able to phonate without assistance. In case any particular sound was not satisfactorily produced, the pressure and shaking were reapplied.

A third very ingenious and successful method consists in first getting the patient to cough which in nearly every case can be accomplished; having done this, then have him cough and at the same time pronounce the different vowel sounds, and thus convince him of his ability to phonate. It is probable that in all pure cases any of these methods, if applied with suitable suggestion on the part of the operator, would be successful; but in the case in which the aphonia is associated with other marked symptoms of hysteria, it is doubtful if complete and lasting success will be attained until the other symptoms have in a great measure subsided, and to this end it is often necessary to improve the patient's general health.

I will now describe some cases which fairly well illustrate the different types which I have alluded to above.

As representing the first type I will quote the case of a policeman, aged forty, of good habits, robust physique; his family and personal history are good, and he could not fairly be regarded as a man of nervous temperament. Though he received some quite severe flesh wounds in the Haymarket riot, in the main his duties have not been severe, neither have his personal or family relations been of such a nature as to cause him much anxiety. About three weeks before admission to the hospital, while travelling his beat, he felt a peculiar sensation, something like numbness, but difficult to describe to his satisfaction, commence in the radial side of the hand, extend to the thumb and index finger, and thence at times shoot up the shoulder. He continued his work until about five days prior to admission, when he suffered frequent paroxysms of severe pains in the left side and chest, accompanied by nausea and vomiting. During these attacks he could not speak above a whisper, and during the intervals he was very hoarse. Finally, when admitted he was pretty constantly and completely aphonic, though occasionally a syllable would be faintly phonated. Movement of the leg was normal, knee jerks were very lively indeed, and there was severe general jerk of the body when the patellar tendon was tapped; vision and the visual fields were normal, but there was complete absence of pain reaction to pin pricks and pinching over the entire left half of the body, including the tongue, gums, and inner surface of the cheeks, while sensation in the right half of the body was normal. Positively assured that a strong current of faradism would restore his voice and relieve his pain and vomiting, after the first application he phonated clearly and was for a time entirely relieved of the pains in the chest and nausea. After a few daily applications he said he felt entirely well, with the exception that occasionally he had slight pain through the chest and still a little numbness in the radial side of the hand. He returned to the hospital several times for treatment after resuming his duties, but in the course of two or three weeks from his admission he had entirely recovered. This, then, was a case of an impure hysterical aphonia occurring in connection with other well-marked symptoms of hysteria, without any apparent exciting cause.

The next case is that of a woman, thirty-one years of age, the wife of a professional man. She has had one healthy child, has correct habits, a good family history, and had always enjoyed excellent health up to two years ago, when a railway train upon which she was a passenger ran into a culvert while going at a high rate of speed, and was stopped so suddenly that all the seats were torn loose and bunched in the forward end of the car. The patient was quite severely bruised on the posterior aspect of the left hip and thigh, and received several slighter bruises on various parts of her person. No one was killed, or in fact more severely injured than herself, so the mental shock was only such as was incident to the sudden confusion and temporary anxiety for the welfare of her child, who was with her but sustained no injury. Almost immediately after getting out of the car she felt weak and dizzy, and vomited. The

accident occurred at 1 p.m., and a few hours later she again boarded a train without assistance and road several hours, till she reached her destination. She had in the meantime suffered intense and increasing pain in the legs, and had been able to walk only by putting forth a great effort. She slept several hours after a full dose of morphine, but when she awoke the pain in her legs was as severe as ever; she felt greatly prostrated, was unable to stand both on account of pain and weakness in the legs, and was unable to speak above a whisper. She continued in this condition for two weeks, when she was seized with severe hysterical convulsions lasting several hours, with unconsciousness and opisthotonos. It was six months before she could walk without support, and about six weeks before she could speak above a whisper. Her recovery from aphonia was not then sudden and complete; at first only a word or syllable was phonated, the remainder of her speech being whispered; then she gradually improved so that her voice only sank to a partial or complete whisper when she was tired. She had suffered many attacks of complete or partial aphonia, always associated with pain and weakness in the legs, and lasting from a few days to a few weeks, between the date of the accident and my examination several months ago. At that time she had been suffering several days from an exacerbation of symptoms like those already described, which she thought had been brought on by overwork and taking cold. For several weeks previous to this exacerbation she had been better than at any other time since the accident, was comparatively free from pain, could walk alone in the street, and her voice was comparatively clear and strong.

When examined she was in bed, complaining of pain in the legs, back, and head; of vertigo and nausea on movement, and inability to walk. She conversed entirely in whispers at first, but later, when her interest became aroused, now and then a word or two were phonated weakly and hoarsely. She said she felt no pain, and showed no signs of feeling any when pricked with a pin ever so deeply, or pinched in any part of her body. The field of vision for white was reduced to the fixation point. The knee jerks were very lively, and when the tendon was tapped the whole body responded with a violent jerk. The body was well formed and well nourished, loss of appetite and nausea notwithstanding. In bed the arms and legs could be moved voluntarily in any direction, though she declared she was entirely unable to walk, both on account of the pain and weakness. I saw this patient only once and then in consultation, and cannot say anything regarding the results of treatment, but it illustrates a type in which an impure form of aphonia is associated with very marked symptoms of hysteria developed by an exciting cause.

The next case may be regarded as illustrating the most common type of pure hysterical aphonia, not associated with any other hysterical stigmata. Miss A. A.—, aged twenty-nine, attendant in hospital for insane; nervous treatment, very competent, good general health. She had been employed several months in convalescent ward, and was not under a strain of any kind, when on rising one morning after sleeping well and feeling in her usual health, she found she could only whisper.

She declined treatment and the attack lasted five weeks without mitigation, when it suddenly and permanently disappeared, the patient having attended to her work as usual in the meantime and remained in her good general health. She had previously suffered two similar attacks at intervals of seven years, from which she had recovered spontaneously, and for which she could assign no cause.

The next case is that of a young man, aged twenty, farmer's son, intelligent, industrious, of correct habits, fond of company, and not notably nervous. His family history is good, and he has always enjoyed excellent health, rarely having even a cold. When he was eleven years of age his father called him as usual one morning to rise, but for some reason he went to sleep again, so that his father called him the second time, speaking somewhat sharply. From that moment until he entered my office, nine years later, according to his own testimony and that of his family and numerous friends and acquaintances, he had never uttered a sound of any kind; in fact, had been absolutely mute. His playmates, when he was still a child, would throw him down and tickle him, trying to make him laugh; his face on such occasions would undergo the usual contortions, but no sound was emitted. On still more careful inquiry, it appears that occasionally a very slight sound had been emitted when he was in the act of clearing his throat, but so far as I could learn he had never been heard to cough so that he could be heard more than a few feet distant, and some members of the family in which he had lived for years were positive that they never heard him utter a sound of any kind; his communications were all made by writing. His hearing was quite acute. Movement, the reflexes, the visual fields, vision, and sensation were all entirely normal.

I had a laryngoscopic examination made by my distinguished colleague, Prof. E. Fletcher Ingals, who succeeded in getting a satisfactory view of the vocal cords only after the use of cocaine; they were found to be normal in every respect, and in making the manipulations necessary to secure a satisfactory examination the patient coughed slightly. After thoroughly arousing his interest and attention by a rather minute and spirited dissertation upon the mechanism of speech (which of course he could not comprehend, but which convinced him none the less of my great skill), I assured him with as much dramatic force as I was able to assume that I could cure him entirely by the use of electricity, and very speedily too. I then proceeded to apply a strong faradic current to the larynx, only for a few moments, by placing a disc-shaped electrode, about one and one-half inches in diameter, on each side of the organ, assuring him beforehand that after I had done this he could phonate the vowel sounds, and that as they were the basis of articulate speech, it would be necessary for him to learn to phonate them first in regaining his ability to speak. Immediately after this procedure he was able to phonate the vowel sound "e" after me; to be sure it was very weak, nevertheless distinct; whereupon I terminated the *séance*, assuring him that the victory had been won. After this I gave him a daily treatment, and the progress was very rapid. He was soon convinced that if he said "e" he could say "eat," and if he said "o" he could say "go," and so on; in

less than a week he could carry on ordinary conversation in rather a low tone of voice. He was then assured that in the course of a week more his voice would gradually strengthen, until it would finally be as strong as that of the ordinary individual, and this he found to be the case. This was six months ago, and he has continued well ever since.

This case deserves some comment on account of the youth and sex, perhaps, of the individual in whom it occurred, but more particularly on account of, nine years' duration of unbroken mutism. He had seen a great many practitioners, none of whom, so far as I can learn, had made a correct diagnosis, probably because it was so difficult to get a satisfactory view of the vocal cords, and after the case had lasted two or three years without interruption a practitioner might naturally assume that it was not one of hysterical aphonia, but really, with the history of the onset that I was able to get the excellent state of general health ever since, and especially when the vocal cords were found to be entirely normal, there was no difficulty in making the diagnosis.

A somewhat careful examination of the literature has not enabled me to find a case that was anything nearly parallel to this in point of degree or duration. I found several cases of hysterical mutism which had lasted for several weeks, and one—that of a young woman of twenty—which had begun as simple aphonia and continued as such for several months, when it lapsed into a condition of mutism likewise lasting several months, and which finally recovered by suggestive treatment. In my opinion the efficacy of the treatment in my case was due entirely to suggestion.

The pathology of the disorder is, of course, the same as that of the other manifestations of hysteria. It is hypothetical, but most pathologists are substantially agreed upon the hypothesis, which is this: The parts of the cerebral cortex which normally preside over the various disordered functions become inactive, to the extent that they no longer respond to the behests of the will as before; accordingly in aphonia the cortical centres from which in health the motor impulse proceeds to the muscles concerned in phonation are no longer excited to activity by the volition of the patient.

Within the last year or two Lepine and Duval—each claims priority by several months—have elaborated a hypothesis to the effect that neurons, when in a state of functional activity or potentiality, are expanded so as to be in physiological contact with such other neurons as properly participate in any particular function. During rational sleep or hysterical paralysis they are contracted, and physiological contact is broken. This theory assumes that the neurons, which are in fact protoplasmic cells, undergo amoeboid movements, and experiments have been made upon frogs which appear to demonstrate the possibility of such movements on the part of neurons.

The effect of suggestion in the treatment of hysteria according to this theory might be rationally accounted for by assuming that it enabled the patient to exert an extraordinary amount of will power, resulting in the necessary expansion and contract of the neurons concerned.

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF

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AUTO-INTOXICATION.

GUSTAV SINGER (*Wien. Med. Presse*, 1897, No. 12) discusses this question, with particular reference to tetany and skin diseases. He considers that some confusion has arisen owing to want of care in the clinical descriptions of gastric conditions, whence harmless atony of the stomach (*gastroptosis*) has been confounded with true dilatation (*gastræctasis*). He quotes the following interesting case of autotoxic tetany. The patient was a man, aged 41, who was attacked with diarrhoea and weakness after eating roast pork; three days before admission to the hospital constipation set in, and this was followed next day by typical tetany. On admission the urine contained no albumen, but indican, diacetic acid, acetone, and aromatic oxyacids; the great curvature of the stomach extended down to the umbilicus. Under treatment with calomel and purges, followed by iodoform internally, the tetany cleared up and the condition of the urine became normal. There can be no doubt that in this case the tetany resulted from the absorption of poisonous products from the intestine, and was determined by the constipation. The author is not inclined to regard the classification of chlorosis among the auto-intoxications with much favor, many cases so described really belonging to the group of secondary anæmias; still, as Meinert has shown, chlorosis is often associated with enteroptosis. With regard to skin affections, Mracek found that in a case of psoriasis the ethereal sulphates and diamines in the urine were increased, and the author, after investigating the condition of the intestine in a large number of dermatological cases, proved that all the signs of increased intestinal decomposition were present in acute and chronic urticaria, in acne, erythema, and pruritus. These conditions were best treated by an internal antiseptic, such as menthol. Kaposi has also obtained good effects in prurigo by the internal use of carbolic acid; Singer has seen two cases in children of the same family who developed prurigo whenever their digestive systems went wrong, and recovered when these were cured. It must not be forgotten, however, that the skin is only capable of developing a certain number of eruptions, and that in consequence the same lesion need not always be due to identical causes. The proof of auto-intoxication will depend mainly on examination of the urine and of the intestine. Constipation with stagnation of the intestinal contents is the commonest cause, and in cases where constipation and diarrhoea alternate, rashes may come and go. In treatment the greatest attention must be paid to diet, in order to diminish the bacterial contents of the bowel.

GLANDULAR FEVER.

In a paper read before the Philadelphia Pediatric Society and reported in *University Medical Magazine*, June, 1897, Hamill deals very fully with this disease, reviewing the literature to date.

First described as such by Pfeiffer in 1889, the disease has not been given the prominence by medical writers, nor attracted the attention of the profession, to the extent that its importance and frequency of occurrence would warrant. Briefly, it is an acute infectious disease, occurring particularly in children from 5 to 10 years of age, attended by high fever, marked constipation, usually faucial redness, and rapid swelling, with great tenderness of the cervical lymphatic glands.

The glandular swelling occurs first on one side; usually, within twenty-four hours the other side of the neck becomes affected, and at times there is more or less general glandular tenderness and swelling. The disease though attended by a good deal of depression runs a favorable course, ending in two or three weeks in recovery. Its aetiology is somewhat obscure, most observers inclining to the view that the infection is by way of the fauces or upper air-passages; others, on account of the attendant constipation, think it may be an auto-intoxication by way of the gastro-intestinal canal. Early life, exposure to cold and pre-existent measles, scarlet fever, whooping cough and influenza are apparently predisposing factors. The disease is highly infectious, occurring usually in epidemics, though sporadic cases are reported.

The bacteriology of the disease has not been worked out satisfactorily. The streptococcus pyogenes has been the organism most frequently found in cases where examination has been made, though other organisms have been described; so that in the present state of our knowledge this matter must be considered to be unsettled.

H. B. A.

BACTERIA UTILIZED.

According to the *Brit. Med. Jour.*, a new system of sewage treatment has recently had an extensive trial at Exeter. Under the new method, not only is no attempt made to sterilize the sewage, but every effort is made to encourage the growth of micro-organisms. Briefly described, the process is as follows:

The sewage is run into a large tank, from which light and air are excluded. In this, the septic tank, the anaerobic organisms flourish, much gas is evolved, and a fine mineral sediment is precipitated. From the septic tank the sewage passes to the aerating troughs, where under the influence of light and air the aerobic bacilli do their work. The effluent from these troughs, after passing through coke filters, escapes in a highly purified condition, the dissolved and suspended impurities having been oxidized and rendered innocuous, exclusively through the agency of bacterial growth. A system very closely resembling the above has recently been undergoing an experimental trial at Sutton, under the direction of

the London County Council. Mr. Dibdin having ascertained, by passing sterilized air through sewage, that the amount of oxidation so obtained was infinitesimal, concluded that practically the whole work of oxidation and nitrification depended on the presence of micro-organisms. He succeeded in isolating an extremely active variety of *Micrococcus candicans* from coke-breeze filters, and conceived the idea of utilizing this in the purification of sewage. A 4-foot bed of burned ballast is prepared, and material containing the micrococcus is added. The sewage is then pumped on to the bed, where it remains for two hours, exposed to the influence of the organism. When drawn off at the end of this period the effluent is of sufficient purity, but as a further precaution it is recommended to filter it through land. Each bed is worked twice daily, long intervals being required to insure efficient aeration.

MARAGLIANO'S SERUM IN PHTHISIS.—Raimondi and Mascucci (*Rif. Med.*, May 5th, 1897) report the effect of this serum in five men and 10 women. Five are described as phthisis with lesion circumscribed in one or both lungs, slowly progressing disease with little or no fever; 10 had more or less extensive tuberculous broncho-pneumonia, with cavities, fever and night sweats. In the latter group five to 10 c.cm. of serum were given every five to eight days until some effect was produced (for example, lowered temperature), and then one c.cm. every day or alternate days. In the former group one c.cm. was given on alternate days. A generous diet was ordered, and phosphates of iron or calcium administered. The total quantity of serum given varied from 20 to 100 c.cm. No deleterious results of any importance followed the injections. As to the effect on the disease, no absolute cure was effected. Apparent cure or noteworthy and persistent improvement was observed in four cases, transitory benefit in six cases, no useful result in three cases. The good effects observed were diminution or cessation of the fever and night sweats, rapid improvement in strength nutrition and body weight, and disappearance or lessening of the physical signs.—*Brit. Med. Journal*.

In the *Deutsche Med. Wochenschrift*, No. 44, 1896, Hauser gives notes of a case of bovine heart in a child eleven months of age.

The patient at birth was weakly, but later well developed, and was the fourth child of healthy parents. At six months it developed a severe pertussis, there being as many as fifty attacks daily, attended with extreme muscular strain and a high grade of cyanosis at the height of the paroxysms.

All therapeutic measures were well-nigh useless, but in four weeks' time there was improvement in so far that the number of attacks was somewhat reduced, there being, however, always from 10 to 12 daily. About three and a-half months after the onset they recurred with increased vigor on which all known measures had no beneficial effect. Later there developed a severe and progressive anæmia, without any distinct cause to be found. Then followed digestive disturbances, loss of appetite, vomiting, obstipation and tympany. The liver was found at first

moderately and, later greatly enlarged, and appeared to be painful on pressure.

The cardiac dulness was increased about a finger's breadth toward the left. The sounds were clear. The weakness increased more and more, and about five months after the onset of the pertussis the patient died.

At autopsy the most important find was very great dilatation, with hypertrophy of both sides of the heart, the left ventricle being especially dilated. The heart was three or four times as large than the fist of the child, and when empty weighed 77 grammes. The valves were found intact, the muscle somewhat pale, but firm, papillary muscle drawn out, trabeculæ thin, endocardium of the left side thickened and white, apex of the heart rounded. The abdominal organs were much congested.

Here, then, are dilatation and hypertrophy of the heart for which none of the usual causes can be found. No congenital anomaly was present, so that the causations seems to lie in the severe pertussis attacks recurring during so long a period of time. With each paroxysm there was the marked venous congestion, which even in the intervals could not be fully overcome so as to compensate the injurious effects, and this stasis in the capillary and arterial system must have influenced the left ventricle. Further, the muscular tension seen with each paroxysm is analogous to that seen in the adult during hard manual labor and was a like cause of hypertrophy of the left side of the heart. A similar condition is brought about in the right heart by the strong compression of the lung during the attacks of coughing, and finally, after each attack, greater activity is demanded of the heart to overcome the circulatory disturbance produced during it.

F. R. Hagner, *Johns Hopkins Hosp. Bulletin*, June '97, reports the successful cultivation of the gonococcus from two cases of arthritis and one of tenosynovitis. In both joint cases the knee was involved, and a vaginal discharge was present; fluid obtained by aspiration and inoculated upon albuminous urine agar gave positive results, the organism giving all the reactions of the gonococcus and negative results on ordinary culture media.

The tenosynovitis in the remaining case involved the sheaths of the tibialis anticus and extensor proprius pollicis tendons. Venereal history was denied, but questionable. Cultures showed the same organism as the foregoing.

The medium used by the author is prepared as follows:

Acid urine containing .005 albumen or more should be collected and allowed to stand for twenty-four hours, no effort being made to prevent decomposition. The urine is boiled until a large albuminous precipitate is formed; it is filtered through paper, when the resulting fluid will be clear. The filtered urine is boiled, and agar-agar, peptone, beef extract and sodium chloride are added in the same proportion as in making ordinary agar.

The other steps are the same as in making ordinary agar, except that filtered albuminous urine instead of water is used throughout the prepa-

ration of the medium. It is important to see that the medium before being placed in tubes has a neutral or slightly acid reaction.

The advantages of using albuminous urine are, first, that in such urine albumens are always present, which are not coagulated by heat, and second, the albumen that is coagulated acts as a clarifying agent in the removal of the salts that usually cause the cloudiness of urine agar-agar as prepared by mixing the urine agar separately and sterilizing by discontinuous heating below the point of coagulation. It is important to have the medium very moist when inoculated.

S. Phillips (*Centblat fur Tuere Med.*, Aug. 7, 1897).—Syphilis of the heart wall is not an uncommon affection. It was recognized in 1842. In the form of gumma or fibroid change it produces changes in the heart in the early years of life similar to those seen in the usual degenerations of old age, and may in slowly-developing cases lead to sudden death. The author has collected 25 cases of undoubted syphilis of the heart wall. As to the predilection for either side nothing definite can be said. The base seems to be more disposed than the apex.

Gummata of the left ventricle, however small, are a danger to life, and can, when near the apex, produce an unexpected exitus. It may clinically be suspected when an individual with syphilitic antecedents presents signs of disturbed action of the left ventricle, angina, tachycardia, syncope, or epileptiform attacks.

Angina pectoris without signs of failure of the heart can depend upon fatty degeneration; but this at the most first appears after the fiftieth year and with other concomitant clinical signs, or it may be referred to an aneurism of the root of the aorta (Broubent), or to an aneurism of the heart wall, which likewise may be the result of a local syphilitic lesion, and with or without rupture prove fatal.

In syphilitic persons, moreover, dilatation of any region of the heart may result from a specific fibroid change, and in such cases a enlargement of the heart without any otherwise appreciable cause, and without a distinct increase of the heart's power directs one's thoughts to a luetic myocarditis.

M. Labbé (*Revue Meus des Malad. de l'Enfance*), reports two cases of tuberculosis of the myocardium. Autopsy in each case showed a general tuberculosis. In one of these before death there was evidence of heart hypertrophy, dyspnoea, cyanosis, œdema, and præcordial pain, with lessened quantity of urine. The anatomical change consisted of a diffuse tubercular infiltration of the heart muscle. The other case showed no signs whatever referable to the heart before death, which appears to be the rule from similar cases in literature. At autopsy was found a solitary miliary tubercle of the myocardium of pin-head size, projecting above the pericardium. Tubercle of the heart muscle is a rare disease; it occurs mostly as a secondary infection, only two cases—those of Dennue and Kroff—being on record as primary.

NOSE AND THROAT.

IN CHARGE OF

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SOME PRACTICAL POINTS CONCERNING DISEASES OF THE NOSE, THROAT AND EARS OF CHILDREN.

BY ROBERT CUNNINGHAM MYLES, M D.

It is in childhood that many cases of impaired hearing originate, chiefly due to nasal stenosis, suppurative rhinitis, and hypertrophy of the lymphoid tissue of the rhino-pharynx and oro-pharynx.

The nasal stenosis can be relieved by straightening the septum, removing thickenings and outgrowths from it, shrinking swollen turbinals with acids; and much relief can be afforded in suppurative rhinitis by securing free drainage and by the application of antiseptic solutions.

Nearly all specialists agree that diseased or hypertrophied states of the adenoid tissue of the vault of the pharynx are the most important pathological conditions of childhood. The objective and subjective symptoms due to disease of this tissue should be carefully noted by the family practitioner. The principal objective symptoms are the open mouth, especially during sleep, and the size of the hypertrophied mass, best ascertained by passing a trained finger behind the soft palate. In many children the size can be determined by inspection through the nose, after cocainization, and the rhinoscopic mirror. The chief subjective symptoms are mouth breathing, snoring, disturbed sleep, impaired hearing, a peculiar dull voice, cough, spasm of the larynx, asthma, bronchitis, etc. Many instruments and methods of operating have been advocated. Whether general or local anæsthesia should be employed is a question frequently difficult to decide in each individual case. It has been the writer's habit, in those cases where the growth is rounded and is rather centrally situated, to thoroughly cocaine the parts with a 20 per cent. solution, and at times with crystals. This is usually accomplished by passing curved cotton applicators, saturated with the solution, up behind the soft palate, and letting them remain there for a minute or two, and also by passing cocaine on very small cotton applicators through the nose into the adenoid tissue. Then a large sheet is wrapped several times around the child from neck to feet, mummy fashion, and securely pinned from top to bottom; the child is held in the lap of some one, while the assistant, who stands behind, holds the head firmly and in a proper position. A Gottstein curette, of suitable size, well sharpened, is passed up behind the soft palate until it strikes the septum, then it is forced firmly upward against the basilar process; a quick upward, backward and downward movement of the instrument usually brings away a large mass

intact. This movement should be repeated two or three times in rapid succession, slightly inclining the curette to the sides respectively. Sometimes a pair of post-nasal forceps with large fenestra are used. After the first flow of blood is over, the index finger, which has been rendered aseptic, is passed up, and whatever small masses have been left around the choanæ and Rosenmüller's fossæ, are broken up. The whole operation is usually done in about thirty seconds. When the growth is very large and attached to an extensive surface, sometimes extending into the posterior nares and down to the oro-pharynx, I prefer to operate under a general anæsthetic; chloroform is the most agreeable to the patient and to the surgeon, but ether, with its slowness and horror to the little patient, is the safest. Bromide of ethyl, nitrous oxide gas intermixed with about 10 per cent. of oxygen are excellent agents in the class of cases when the operation can be finished in thirty to fifty seconds. When operating in cases of general anæsthesia, I first use the large fenestrated forceps, adjusting them carefully around the growth before making the traction. After the large section is removed the patient's head is placed over the edge of the table with the face downward, and the blood is allowed to run out of the nose and mouth. The smaller forceps and curette are used, carefully guarded by the finger, to remove the remaining marginal and fragmentary masses. The results of the operations are as gratifying as any in the department of surgery. Nearly all of the unfavorable symptoms disappear at once, and the hearing improves rapidly and markedly.

It has been the experience of the writer that one of the simple forms of Mackenzie's tonsillotome is the best for removing gall protruding faucial tonsils, and the punch and die Rongeur forceps have been found extremely serviceable for the tonsils which are hypertrophied in their bases.

Hypertrophy of the small glands in the post pharyngeal wall, usually described as granular or follicular pharyngitis, is best relieved by some form of curette. I have found the one devised by Mayer to be the best for general use. Hypertrophy of the lingual tonsils of children occurs quite frequently in my cases. The majority of writers, I believe, assert the contrary. The writer's modification of Chappell's lingual tonsillotome has been most serviceable in removing these lymphoid masses. They usually cause cough and many disturbances about the larynx.

The general practitioner should be more alert in regard to ascertaining the exact state of the child's ear, especially in those cases where the symptoms are vague or indefinite. Several cases have come under my observation where the family physician had been treating the very young child for several weeks for irregular fever, fretfulness, profound nervous disturbances, etc. and only on rare occasions did the child place its hand on the side of the head. When the ear was examined the drum cavity appeared to be full of fluid, the membrana tympani was bulging and congested. Incision brought away a quantity of pus, and the improvement was immediate, marked and rapid. In all cases of discharge from the external auditory canal strict aseptic and antiseptic precautionary measures should be used. The best results have been obtained from a solution of bichloride of mercury 1-5000 and from a saturated solution of boric acid, which should be occasionally alternated by a small quantity of the powder.—*The New York Polyclinic.*

PAEDIATRICS.

IN CHARGE OF

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SOME POINTS IN THE TREATMENT OF CHILDREN'S DISEASES.

E. P. Davis (*College and Clin. Rec.*, 1896, *xvii.*, 233) gave the following points in a lecture at the Phila. Polyclinic:

Barley water is prepared by adding one tablespoonful of barley grains to one pint of scalding hot water, allowing it to stand and then straining; it is a valuable addition to the diet, exerting an astringent action on the bowel in case of diarrhoea.

Oatmeal water is prepared by the addition of one tablespoonful of oatmeal to the pint of scalding water, allowing it to stand; strained and administered it exerts a laxative action.

If the child vomits, is feverish, and has frequent stools, the milk should be stopped altogether for twenty-four to thirty-six hours and albumen water substituted.

Albumen water is prepared by adding the white of one raw egg to eight ounces of water; in addition the child should get light chicken or mutton broths or freshly extracted beef juice.

Brandy and water form a good stimulant and may be administered in ten-drop doses six or eight times a day. The administration of a dose of castor oil, guarded by some brandy to prevent griping, is of exceeding value to clean out the irritating material from the intestines. Lavage of the intestine is of first importance in intestinal infantile disorders. It is usually accomplished by the use of a number 11 or 12 soft rubber catheter and a fountain syringe with one or two quarts of warm water. The best result is obtained if the infant is placed on its abdomen across the nurse's knee, the water being at a temperature of 100° F., and a little soda or salt added to it. Great relief is obtained from the evacuation of the flatus and feces. In chronic cases some antiseptic and astringent must be added to the water, thus:

Boric acid, $\frac{1}{2}$ ounce to the quart.

Creolin, 30 drops to the quart.

Sodium salicylate, 10 gr. to the quart.

Thymol, 1 part in 2,000.

Mercuric chloride, 1 part in 10,000.

The use of the solution of mercuric chloride should be followed by irrigation with warm water; this irrigation of the intestines not only removes the flatus and feces but exerts a stimulant action upon the bowel.

—*Pædiatrics.*

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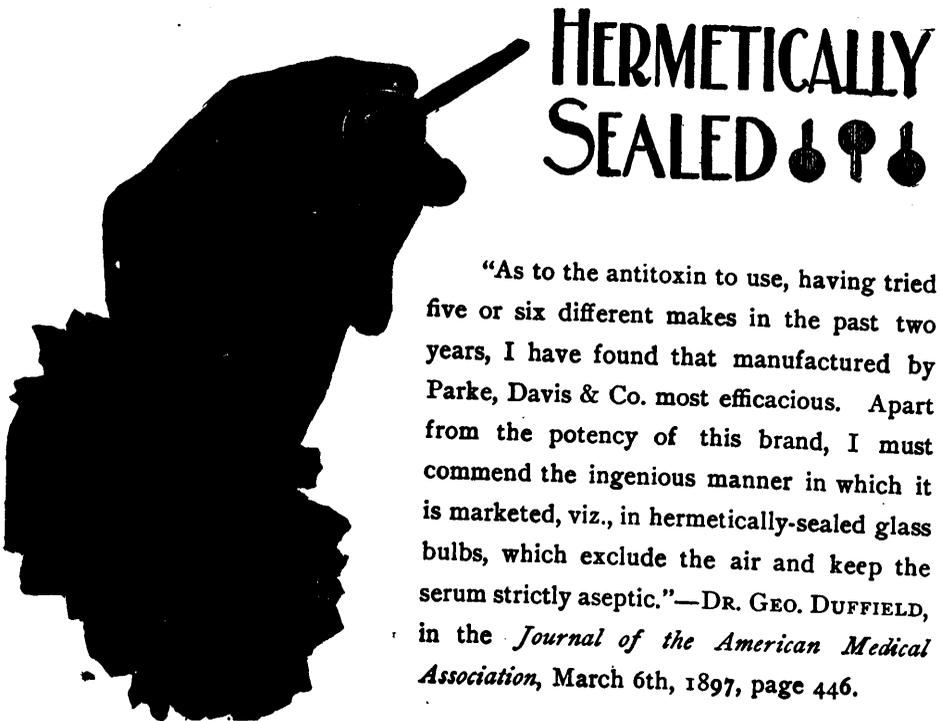
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Editorial.

THE MEDICAL COUNCIL.

In the August number we referred to a few changes made during the last session, and we now continue in accordance with a promise then made.

In the early part of 1896 the Minister of Education prepared a bill to provide for such applicants as sought registration on credentials other than the Departmental certificate, which, inclusive of a degree in Arts, was the only portal to the study of medicine.

It had been represented to the Hon. Mr. Ross that the said qualifications, although not identical in form, were equivalent to the certificate required by the Council. Some were undergraduates in various institutions, and others, having in part failed in the Departmental Arts matriculation, requested acceptance of a supplemental certificate covering the subjects in which they had come short of passing initially. As is known, the Department recognized no supplementary work done, insisting upon a full examination before a certificate being granted, and this line was followed by the Council in order to act fully in harmony with the directing centre of Provincial education.

In addition to these there were others who tendered certificates of matriculation issued from a multitude of teaching bodies.

The proposed bill was intended to cover all such cases from the highest to the lowest; and a change more radical still was indicated, viz.: the possibility of proceeding with the professional course of study up to and including the primary examination before matriculation, or, in other words, without any sort of guarantee of ordinary educational attainments before the completion of a large portion of the scientific course. This is so contrary in its spirit to the genius of every self-respecting institution of learning that we cannot help deploring the fact that the Government carried its prerogative to such an extremity as to coerce the Council into accepting an examination conducted piecemeal specially for matriculants in medicine, and considered by the Department as not good enough for Arts.

At the same time the Profession was forced to swallow the deferring of matriculation to the primary examination and all the other details of the bill—in other words, the Council had the choice offered of committing suicide, so far as the control of matriculation is concerned, or of submitting graciously to the gentle hand of parliament controlling the guillotine. In an interview with the governing power, lest the blade might descend farther than was anticipated, the Executive of the Council concluded to act in accordance with the "suggestion" of the Minister of Education and carry into effect what was proposed; hence, last year many clauses were inserted in the provisions for matriculation, and amongst them all we know of only one that could not be denominated an imposition, viz.: that making examination in Arts at the end of the first year equivalent to the ordinary matriculation, as required by the Council.

Political intervention in the principles that guide professional bodies may be necessary in extreme cases, but we humbly submit that there are many affairs in which Governments are, in the nature of things, more wisely qualified to interfere than in the curtailing of privileges long ago accorded to a profession whose self-management is founded on many years of special experience, and whose sole desire is the maintenance of a standard which shall be a credit to its licentiates, and at the same time fairly commensurate with the educational and financial resources of the country.

With all our regard for the Minister of Education we do hope that in the future he will see fit to allow the profession of medicine to utilize its wisdom to work out its own legitimate destiny. Its representatives occasionally make just such little mistakes as once in a while appear in the statute book; but more good will in the end be accomplished through liberty of action, guided, when urgently required, by a word of kindly advice than autocratic intervention can ever secure.

It should, however, be stated that the provisions of the proposed bill were for the purpose of "cleaning the slate" of a number of cases to which the attention of the Government had been directed, and that this was fully set forth last winter by the Hon. Mr. Ross when the petition of the Profession was presented to the Government.

Accordingly, last session the Education Committee expressed to the Council the opinion that the "slate must have been pretty well wiped," that the Council had fairly fulfilled its part of the compact, and that the time was fast approaching when resumption of its original prerogative would be in order. This advice was acted upon, and time restrictions were placed on clauses 2, 3 and 5 of matriculation requirements, as per Section I. of Annual Announcement, 1896-7. We believe 2 and 5 cease to be available in 1898, and clause 3 in 1899.

Heretofore, the work of the clinical year has been somewhat indefinitely indicated; in order to obviate confusion Sub-section 1, Section II, will be so worded that six months at least must be spent in hospitals, dispensaries or laboratories devoted to physiological or pathological research, and the remainder of the year with a licensed practitioner.

Hereafter, no ticket for lectures will be accepted unless it sets forth, not only that the holder has attended not less than 75 per cent. of the

required number of lectures, but also that such attendance has extended over at least 75 per cent. of the time allotted to such course,—a change in the right direction, because forced cramming for, say, half a session, is inconsistent with proper assimilation of such knowledge as is supposed to be imparted in twice that time.

The didactic lectures have not been increased—except in one or two particulars where the necessities of the case rendered it imperative.

Instead of twenty-five lectures and demonstrations in Pathology there will be fifty, and, in addition thereto, twenty-five in Bacteriology, together with five lectures and five demonstrations on the use of Anæsthetics.

This last innovation was badly needed—bungling nervousness in the use of chloroform or its substitutes is a sorry spectacle to behold, especially when consideration is given to the fact that responsibility of the Anæsthetist is not infrequently greater than that of the operator.

The number of clinical lectures and demonstrations has been largely increased—from sixty to one hundred in each of two sessions. This means simply a guarantee that adequate work will be demanded from all and an imposition placed upon none. From inquiries in different schools we learn that their clinics already fulfil the new requirements; their faculties have found such a course no more than necessary to fully equip the student for his examinations, which are of a high order.

Taking into consideration all the changes indicated in our last as well as in this number, the conclusion is safe that with the exception of the continuation of that *bête noir*—the fifth year—our representatives have been guided by a desire for just dealing and that the standing of the Profession is one to evoke a feeling of satisfaction and to preclude successful criticism on the part of any disposed to be captious.

FATIGUE.

“If a man could feel all day like he does just after he has had his cold bath in the morning,” what an enormously increased amount of happiness there would be in the world; how much greater would be the amount of work done; and how greatly would the quality of the work done be improved. It would be impossible to compute or even imagine the change in the complexion of the world to the human species if the element of fatigue could be, not eliminated, but even moderately reduced. How many of us are handicapped by “that tired feeling” which is with us a good deal of the time! Think of the sum-total of misery, agony even, which humanity suffers with each revolution of this globe, through fatigue, both mental and muscular.

The question of mental fatigue is one intimately bound up with the economical and social conditions of this *fin de siècle* age in which, happily for us, or otherwise, our lot is cast. We believe that, eventually, good will be the end of all the ill, and that the terrible strain under which civilized mankind, and especially that portion of it which inhabits this hemisphere, is living will give place to a more rational enjoyment of

those things which have been given us "richly to enjoy." With this form of weariness we shall not deal, as the roots of its cause strike deep into the commercial and social condition of our present system of existence, and the question is outside our present purpose. But muscular fatigue is a question which is of great moment to the individual as well as to the community. It is one which individuals may, to a certain extent at least, decide for themselves, irrespective of their environment. We do not mean in the matter of muscular exertion, for that will be necessary always; but in the matter of food. Is it not true that the average man eats too much? If we exclude from our observation the miserably poor, who can not secure too much food, we think that, notwithstanding the many tales we as doctors hear about "poor appetite," "no relish," "lives on nothing," etc., the fact is that people eat too much, rather than too little.

The "Hunger Cure," at Baden, had a deal of success, though the patients were allowed only about four ounces of white bread and one tumbler of water in twenty-four hours. The amount of fæculent matter they discharged was to them a constant wonder; as it is to patients with each of us, who say "There is nothing in me. I have eaten nothing for a whole day." Yet they are astonished at the amount of matter a good dose of castor-oil will bring away, even when they were certain they were "void of any such."

The *kind* of food to be taken by muscle-workers is of great importance and, if science be correct, quite different from what, according to the popular notion, is correct.

The laboring man, generally, will tell you that without lean meat in plenty he is not at his best.

Dr. Haig, says the *Codex Medicus*, has placed this subject on a scientific basis. His recent masterly work has done much to open the eyes of practitioners as to the cause of many of the ordinary diseases, which too many of us are inclined to treat with drugs on the routine plan.

He finds one chief cause of fatigue to be the increase of urea in the blood, this increase being the natural and certain result of the retrograde metamorphosis of nitrogenous substances in the tissues doing work, and the production of urea faster than it can be carried off through the kidneys. His reasoning is, that urea being an alkaline product, the greater the alkalinity of the blood the less rapidly can the urea be removed by the organs of excretion.

Why do we weary sooner in hot weather? Because with more perspiration the blood is more alkaline, and, consequently, the nitrogenous waste is more slowly eliminated by the kidneys; it accumulates in the blood and produces the sense of muscular fatigue we all know too well.

Now, we have long known that an excess of nitrogenous matter in the food results in the production of an excess of urea; so those who eat lean meat in quantities must, unless the urea be rapidly removed, suffer early from weariness. Individual liking for fresh lean meat, the pleasures of the table and fashion, have recently given an impetus to its consumption.

In the old days in our Canadian lumber camps, fat pork was practically the only animal food the men had for five and six months at a time. Yet we are told they did more work per capita, and came out in the

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spring in better condition than now, when the custom is to consume beef and mutton almost to the exclusion of fat pork; and cake and pie are on the table three times a day.

A couple of weeks ago we enquired of an Indian, who was rowing us for 'lunge in the Georgian Bay, how the board was in the camp he worked in last winter. "Good board," he said, "pie every time." "Plenty beef." Much pork, we asked. "No, not much pork."

Dr. Haig's scientific deduction is that a vegetable diet ought to be the best on which to do manual labor, and this should be the case, especially during prolonged exertion. He cites a case of a long distance walking competition in which, though the number of contestants was large, the winners were all vegetarians.

We remember reading many years ago in *Carpenter* that a properly composed vegetable diet was entirely satisfactory for laboring men. Are we coming back, as science advances, to the ideas of those giants in the medical world who, by careful observation and wonderful power of combination, regulated the health of our grandparents and great grandparents some decades ago?

GUAIACOL IN PUERPERAL ECLAMPSIA.

Dr. J. F. R. Appleby (*Boston Med. and Surg. Jour., North Amer. Pract.*), says: When guaiacol is poured upon the abdomen, it is rapidly absorbed. Its physiological effect is to cause rapid and marked lessening of arterial blood-pressure, lowering of temperature and free diaphoresis. These physiological effects first led me to use it in a case of *nephritis attended with slight convulsions* and a full, hard pulse. Patient, adult male. Twenty-five drops were poured upon the abdomen, and rubbed in with the tips of the fingers. Relief was certainly marked.

Next I used guaiacol in two cases of *puerperal eclampsia*, with surprising and happy results. Primiparas. In the first, labor was progressing favorably; dilation had been accomplished; occiput had begun to descend, when convulsions came on, becoming more profound with each recurring seizure. As soon as practicable, chloroform was administered, and a large male child was delivered with forceps. On the anæsthetic wearing off, convulsions returned, whereupon I poured forty or fifty drops of guaiacol, (case too urgent to take time to count drops) upon the abdomen and gently rubbed them in, as in the preceding case. In a few minutes pulse became soft, free diaphoresis set in, and convulsions died away.

Second patient had been delivered by a midwife. Baby and placenta had come away, when convulsions set in. The patient was enormously swollen over the whole body; pulse was full, hard and tumultuous. Convulsions were almost continuous. They were as powerful, if not more powerful, than any I have seen. It looked like a hopeless case. I used forty or fifty drops of guaiacol and gave a hypodermic injection of one-tenth of a grain of sulphate of morphia. In less than an hour the patient was sleeping quietly, and no more convulsions followed.

Both cases had albuminuria and were much swollen, which symptoms demanded treatment for a few days. Boys are now enjoying ordinary health.

For guaiacol there may be claimed certainty of action, speedy relief of urgent symptoms, and ease of application, which renders it perhaps more desirable and less objectionable than any one of the remedies heretofore used in eclampsia.

In neither case was it necessary to make a second application, but I would certainly have done so had it been necessary.

EAR SUPPOSITORIES.

Radlauer, of Berlin, *Therap. Woch.*, makes suppositories for the ear of cocaine, menthol, resorcin, cocoa butter and olive oil, which also contain a cotton wad to prevent the escape of the fluids as they dissolve. They are recommended highly by Lasser, as they are effectual, and save the introduction of the various medicines separately. The patients can insert them themselves, if necessary, to save time and trouble in clinics, etc. They are designed to heal inflammations, to soften accumulations of wax, to prepare the ear for operations, etc., and are made in two sizes, for children and adults.

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A SYSTEM OF PRACTICAL MEDICINE. By American Authors. Edited by Alfred Lee Loomis, M.D., Late Professor of Pathology and Practical Medicine in the New York University, and William Gilman Thompson, M.D., Professor of Materia Medica, Therapeutics and Clinical Medicine in the New York University. To be completed in four imperial octavo volumes containing from 900 to 1 000 pages each, fully illustrated in colors and in black. Vol. I. Infectious Diseases. Vol. II. Diseases of the Respiratory and Circulatory Systems, and of the Blood, Kidneys and Genito-Urinary Organs. Vol. III. Diseases of the Digestive System, of the Liver, Spleen, Pancreas and other Glands; Gout, Rheumatism, Diabetes and other Constitutional Diseases. In Press. Vol. IV. Diseases of the Nervous System and of the Muscles. Diseases of doubtful origin, Insolation Addison's Disease, etc. In active preparation. For sale by subscription. Per volume cloth \$5.00; leather, \$6.00; half Morocco, \$7.00. Lea Brothers & Co., Publishers, Philadelphia and New York. Toronto: McAlinsh & Kilgour, Confederation Life Building.

Volume II. of this great work lies on our table. It is fully up to Vol. I in merit, and that is saying a good deal. It may seem needless to say to our readers that such a work, undertaken by the firm of Lea Brothers & Co., would necessarily be first-class; but the result so far even surpasses what we had anticipated. To say that it is up-to-date, well written, well arranged, well printed, does not do justice to the work. We have gone over a great part of the book with great interest and pleasure, and have no hesitation in saying that it is the best work on the diseases discussed in its pages that we have ever seen.

It is a pity that medical literature is so evanescent. It is the price we as individuals, have to pay for being in the ranks of a profession which is the expression in a concrete form of the most progressive science the world has to-day. But we venture to say that the works in question will be standard and classical for many years to come. The list of contributors to this volume contains many well-known names, of which we may mention Thomas Warren, Coleman, Cutler, Loomis, Alfred Lee and Shattuck.

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SYNOPSIS.

APENTA WATER IN THE TREATMENT OF OBESITY, AND ITS INFLUENCE
ON CHANGE OF TISSUE.

Observations in PROFESSOR GERHARDT'S Clinic in the Charité Hospital, Berlin.

The *Berliner Klinische Wochenschrift* of March 22, 1897, publishes a Report upon some experiments that have been made under the direction of Professor Gerhardt, in his Clinic in the Charité Hospital at Berlin, demonstrating the value of Apenta Water in the treatment of obesity and its influence on change of tissue. "Such experiments," it is observed, "could not be carried out until quite recently on account of the inconstant composition of the bitter waters coming into the market. In this respect the Apenta Water is favourably circumstanced," and it was chosen for these observations because of its constancy of composition. The conclusion arrived at as to the value of Apenta in the treatment of obesity, and as to its influence on tissue-change, was that it "succeeded in producing a reduction of fat in the body without detriment to the existing albumen," and that "the general health of the patient suffered in no wise, and the cure ran its course in a satisfactory manner. A translation of the Report may be obtained on application to Messrs. Charles Graef & Co., 32 Beaver Street, New York, Sole Agents of the The Apollinaris Co., Limited, London.

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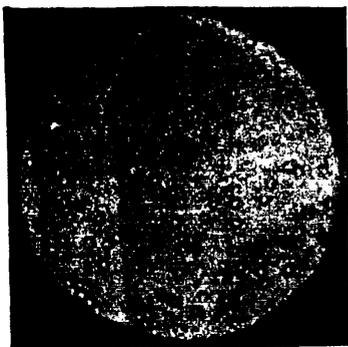
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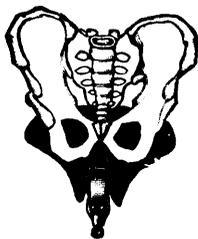
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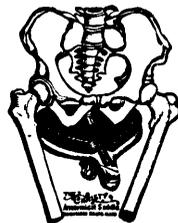
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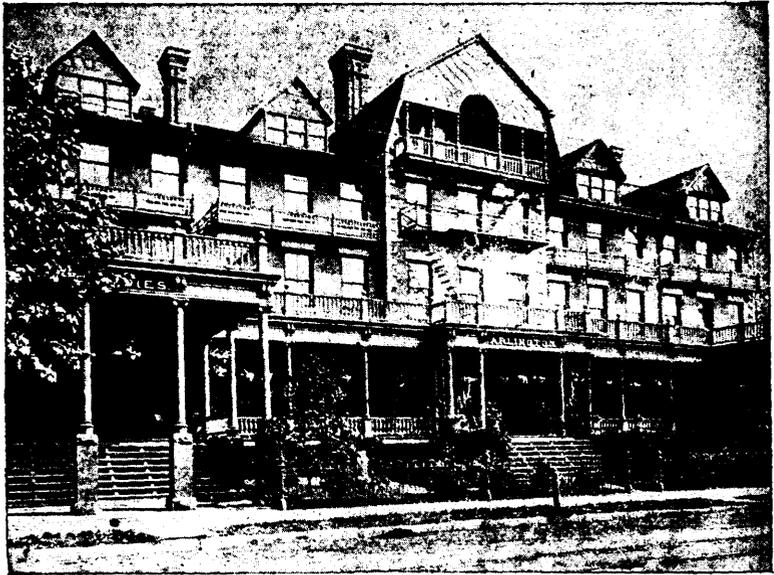
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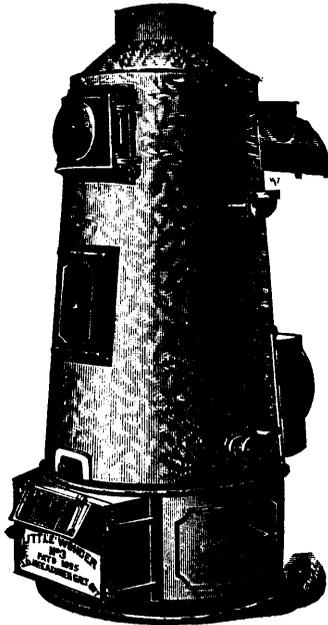
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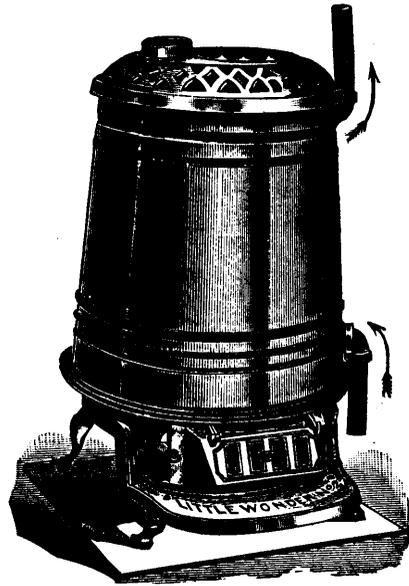
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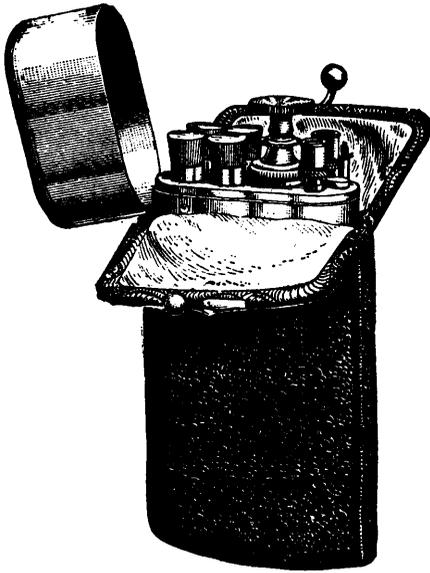
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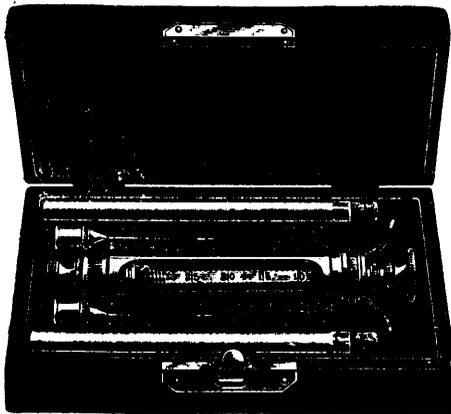


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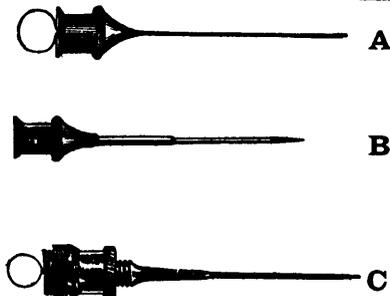
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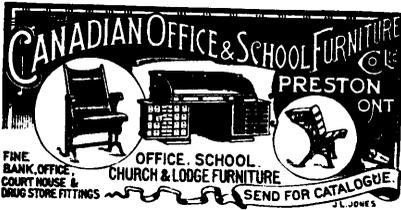


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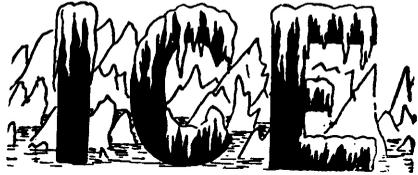
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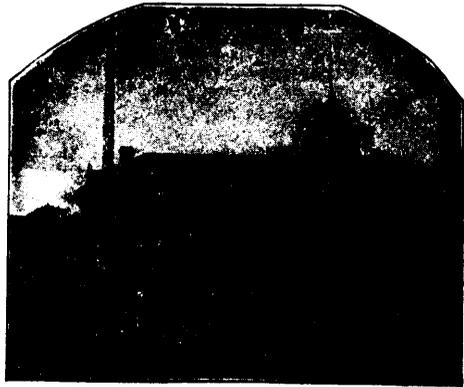
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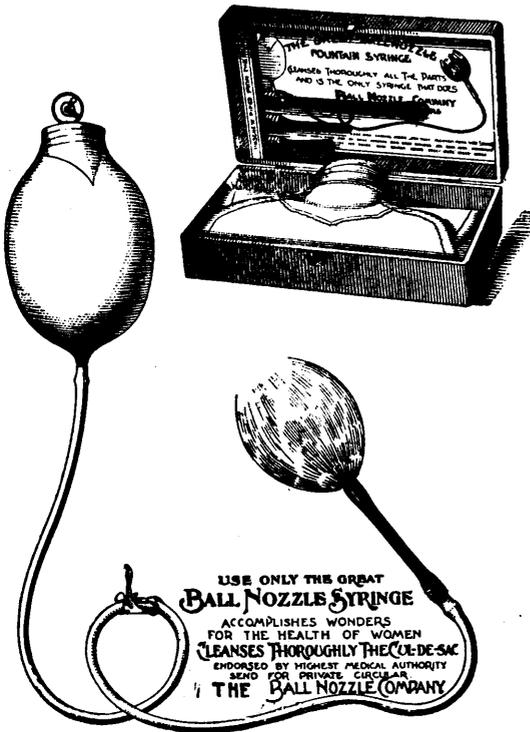
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DIRECTIONS.

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Cold Water	-	-	Half Pint.
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Heat the mixture with constant stirring until it comes to the boil in ten minutes.

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