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CHLOROFORM AS AN ANÆSTHETIC— ITS PHYSIOLOGICAL ACTION AND THERAPEUTIC VALUE.*

BY JOHN J. GAYNOR, M.D., DEBEC, N. B.

It may be well at the outset, in view of its being often forgotten by some surgeons, to call attention to the fact that physiological respiration in man is performed either through the mouth or nasal fossæ, —never simultaneously through both. It is therefore a mistake of the chloroformist to believe that, if the mouth be left open and uncovered during nasal inhalation the patient will inspire sufficient air to dilute the anæsthetic to the standard of safety, or that the holding of the nose during buccal respiration will hasten anæsthesia. Such phenomena could only occur in the presence of peculiar pathological conditions of the soft palate, or pharynx, or of both.

The immediate local effects of chloroformic vapor on the air passages are of a stimulating nature: those portions of the mucous membrane which minister to special sense are thus placed in the highest state of functional impressibility, and, as might be expected, the salivary glands become abnormally active. Large or small volumes of air are usually swallowed with the saliva at this stage; later on we shall enquire why we may also have vomiting. Let us first examine the nervous circle of salivation. Here we find, that through chloroformic stimulation of the glosso-pharyngeal and gustatory end-bulbs a centripetal incitation is generated and conveyed to the gustatory centre in the medulla oblongata, and thence reflected on the auriculo-temporal and chorda-tympani as a centri-

fugal excitation to the salivary glands. The hypersecretion which follows is of short duration, because the nerve cells of the end-bulbs soon become semi-coagulated and unimpressible. It must not, however, be forgotten or overlooked that such a secretion takes place, and that it may accumulate in the pharynx; consequently we should, in any and every case of accident under chloroform, clean out the mouth and draw the tongue forward.

The remaining portion of the respiratory tract shares equally in the general stimulation, and as the volume of carbonic acid gas exhaled during the period of excitement is greater than normal, we thus have a double cause for pneumogastric irritation. This last is translated by increased frequency of respiration, and the patient's usual attempts to displace the inhaler. Tolerance is soon established, but as the mucous and respiratory membranes are sometimes anæsthetized before sufficient vapor has entered the blood current, the respiratory stimulus is often wanting and the patient may forget to breathe. Let us not attempt, as is often done in such cases, to squeeze the wind out of him; such a proceeding invites cardiac syncope. The sense of hearing, owing to the depth at which its encephalic centre is located, is the last to yield to anæsthetics, and without resorting to physical force, we should, in the case in question, simply tell our patient to "breathe naturally."

When impure chloroform is used for inhalation the patient is almost suffocated by the first inspirations, the veins of the neck and face become turgid, the number of respirations diminished, the pause between inspiration and expiration lengthened, the period preceding anæsthesia prolonged, and the risk of cardiac syncope increased. A chloroformization which begins badly will follow a troublesome course, and require marked attention. "Pure chloroform kills only when badly administered." Unless we use a "Snow's Inhaler," Gosselin's intermittent method of administration is the correct one; but we must ever bear in mind that over 5 per cent. of chloroform in the inspired atmosphere is dangerous, and that 10 per cent. destroys life by completely inhibiting molecular interchange.

Having thus far dealt almost entirely with effects due to local stimulation, we will divide complete anæsthesia into four periods, viz. :—(1) Anæsthesia of the cerebrum, cerebellum and basal ganglia;

* Read before the N. B. Medical Society, July 18, 1883.

(2) of the pons variolii ; (3) the spinal cord, and (4) medulla oblongata. This division is based on the order in which the grand centres succumb, because, though the entire nervous sodality is simultaneously affected, the superficial portions of the encephalon yield before the deep, and the spinal cord before the medulla oblongata. Complete anæsthesia must necessarily destroy life by paralyzing the respiratory centre. Surgical anæsthesia corresponds with paresis of the pons varolii and consequently does extend beyond the centres of the "life of relation."

The immediate constitutional effect of chloroform in the circulation is general stimulation—psychical, nervous, muscular, and circulatory—the phenomena of which when taken collectively constitute the period of excitement. This period of inebriation is, however, much shorter than when ether is employed, the patient's struggles not being so violent, nor the volume of air drawn into the stomach so large. Stimulation is rapidly replaced by sedation until surgical anæsthesia is reached, at which time the vaso-motor, cardio-motor, and respiratory centres alone remain capable of performing reflex functions. Here let us add, parenthetically, that the essence of a reflex act consists in the transmutation by the irritable protoplasm of a nerve-cell of an afferent into an efferent impulse. If we now divide the reflex centres into sensori-motor, ideomotor, excito-motor, and inhibitory, we will be the better able to follow this rapid growth, and as rapid decline, of nervous irritability. The sensori-motor centres are chiefly situated in the medulla oblongata and spinal cord, and reflex action through these centres places the organs of special sense in a fit state to receive and transmit impressions. Those purely material centres are again connected with their respective ideo-motors situated in the convolutions of the cerebrum, and this last connection is apparently the psycho-material telephone between matter and mind. Through it the individual becomes conscious of external impressions ; and were this link destroyed, organic aptitude still remaining, we would have what might be called "ideo-coma." Bearing in mind that the primary action of chloroformic vapor is stimulant, we can readily understand how the circulating anæsthetic excites the conscious centres of special sense, and why those senses are, for a time, more acute than normal. The functions, then, of the cerebral con-

volutions being eminently psychical, different areas being the seats of muscular consciousness for different muscular groups, these areas are called into action only when intelligent consciousness and volition are needed. The cerebellum, on the other hand, is the co-ordinating centre of muscular precision for voluntary movements, and the basal ganglia are the semi-conscious centres through which the different impressions are carried and returned from their various conscious and co-ordinating areas. What then might be expected but, that the primary chloroformic incitation of those encephalic centres should give rise to an unusual supply of muscular force, an exactness of muscular movement, and a rapid evolution of ideas, derived in part at least, from immediate external impressions. Should this quickened consciousness, this cerebral power to generate ideas manifest itself in the form of a powerfully depressing emotion, such, for instance, as "fear of instantaneous death," the special centre in which this originates may also generate a motor impulse which, if reflected on the pneumogastric, may inhibit the heart in diastole. In this way only can we account for many of the unexpected deaths which have occurred, without apparently sufficient cause, during the earlier stages of chloroformization.

The above leads us to another consideration. The more thoroughly educated are particular ideomotor centres, the more highly differentiated their constituent nerve-cells, and, as a consequence, the more irritable and rebellious to anæsthetic influence. Now, the cardinal principle in man is self-preservation ; in woman, preservation of the species. Man is aggressive ; woman emotional. As a result of this psychical difference, we generally find that the actions and incoherencies of male subjects during the period of chloroformic excitation are of the combative variety. Women, on the contrary, may display the emotional by singing, etc., but their thoughts and sensations usually run in procreative channels. From this peculiar action on the softer sex, we deduce the practical rule: Never anæsthetize a female excepting in the presence of a third person.

Let us next see what may be learned from the state of the pupil. In the iris we find two sets of muscular fibres, supplied by two sets of motor nerves originating in two different centres. The circular fibres (*sphincter pupillæ*) receive their efferent nerve supply through the motor oculi from the

motor tract of the pons varolii and the corpora quadrigemina; the radiating fibres (*dilator pupillæ*) are supplied by the sympathetic from the cilio-spinal centre situated in the spinal cord between the 6th cervical and 2nd dorsal nerves. By irritation or paralysis of one or other of these musculo-nervous mechanisms, contraction or dilatation of the pupil is accomplished. Now, the cerebro-spinal system responds more rapidly to excitation than the sympathetic, consequently, the trophic stimulation of chloroform reaches the sphincter pupillæ before the counteracting sympathetic impulse arrives in the dilator fibres, and the first phenomenon noticed in the pupils is contraction. The equilibrium is soon established, but is of short duration, and as the pons varolii begins to yield, dilatation increases. The rule then is: the pupil is dilated during surgical anæsthesia. When death occurs before surgical anæsthesia has been reached, and when, in this case, we find a contracted pupil, the surgeon not having commenced to operate, death is usually due to the audacious or ignorant chloroformist. He has crowded the vapor on the patient; the blood has been called to the abdominal organs and, as a consequence, this chloroformed blood has paralyzed the sympathetic system. The pupil contracts, and I need scarcely add that death begins at the heart.

When surgical anæsthesia is reached, touching the corneal conjunctiva fails to excite palpebral reflex. This reflex act is, excepting dilatation of the pupil, the last of those of the "life of relation" to disappear, and the time of its abolition is yet far enough removed from the period of toxic accidents produced by chloroformic drowning. On the other hand, returning consciousness is first indicated by the restoration of palpebral reflex in the form of fibrillary contractions of the inferior eye-lid. That contractions can be first awakened in the lower eye-lid is due to its chief nervous supply being from the portio-dura, while the upper eye-lid is, in the greater part, supplied by the patheticus and motor oculi. If, then, we pay attention to palpebral reflex, we can, after anæsthesia is reached, regulate inhalation by suppressing and recommencing according as we cannot or can excite contractions in the lower eye-lid. A minute observation of this phenomenon must not, however, exclude an attentive surveillance of the rhythm of respiration, and general muscular relax-

ation. The difference noticed in the doses required to produce toxic effects in different individuals is chiefly due to personal idiosyncrasy, the purity of the chloroform and the method of administration.

Vomiting is of more frequent occurrence under ether than chloroform. This is in a large measure due to the more grateful odor of chloroformic vapor, and the comparative shortness of the period of excitement. When vomiting occurs in the primary stage of inhalation, it is produced by pharyngeal reflex and is accompanied by nausea due to cerebral anæmia. The chloroform which produces such vomiting is dangerously impure and should be at once discarded; it will assuredly produce cardiac syncope by trifacial or superior laryngeal reflex. A less impure article will usually produce vomiting during the anæsthetic stage, though here the amount of air which has been swallowed plays a part. This air irritates the terminal fibres of the gastric plexus, and by reflex through the vomiting centre, the phrenic nerves stimulate the diaphragm to fixity, and the vagi produce expulsive efforts of the stomach. Nausea is absent. Pure chloroform seldom produces vomiting, provided the patient's stomach be empty. Let us then order our patients not to eat any solid food for twelve hours, or swallow liquid food for four hours before we commence to operate. Of course, we do not include in this last category the usual glass of brandy which, if given, should be administered immediately before placing the patient on the operating table. Furthermore, we should prescribe gargles of bromide of potash to lessen pharyngeal susceptibility, and use only pure chloroform. With these precautions vomiting is generally avoided, and this alone is a matter of much moment, especially in abdominal surgery.

Chloroform anæsthetizes by producing a temporary sclerosis of the afferent nerve-cells of the cerebro-spinal system, and by inhibiting the molecular interchanges of animal chemistry. It is however an open question as to whether the motor nerves of animal life are affected by chloroform, but from its action on the heart it would appear that the organo-motors are, at least, rendered paretic. Anæsthesia commences at the periphery and proceeds towards the animating and co-ordinating centres of animal and organic life. Owing, however, to a more liberal nerve supply, some portions of the integument are more hyperæsthetic

than others. Thus, in surgical operations on the external organs of generation, particularly in females, we find that reflex action may be excited in the parts, though the remainder of the periphery of the trunk be anæsthetized. Anæsthesia, in these cases, needs be as profound as if we were going to amputate below the elbow or knee joint.

Confirmed alcoholics are more or less refractory to anæsthetics, and in reducing old luxations on those subjects we are often unable to obtain complete muscular relaxation by confining ourselves within the ordinary limits of surgical anæsthesia. One reason for this is, that the cortices of the motor centres having been previously hardened by alcohol, are not as rapidly affected by chloroform.

The antispasmodic properties of chloroform are of signal service in poisoning by strychnia or brucia. The tetanic convulsions, opisthotonos and fixation of the diaphragm, in these cases, indicate an exalted reflex irritability of the spinal cord. Anæsthesia destroys this hyperæsthesia and relaxes the clonic spasm of the respiratory muscles—a spasm which produces death by apnœa. Chloral hydrate, potassium bromide, Calabar bean and nicotia are usually recommended as physiological antidotes to strychnia, but chloroform by inhalation is our main reliance. We of course advise that tannin be administered, the stomach evacuated whenever it is possible, but the respiratory spasm must be relieved and kept in subjection.

Inhalations of chloroform have become classical in the treatment of puerperal eclampsia, but to elucidate, if possible, the rationalé of this medication we needs must make a cursory etiological survey. Here, then, whether anasarca or albuminuria be present or otherwise, we are supposed to find an excess of urea in the blood, and many believe that the convulsions of puerperal eclampsia are due to the action of the carbamide on the nerve centres. Late French experimenters, however, assert that there is no such thing as "uræmia," that what has generally been accepted as uræmia, should be called "potassæmia," that the potassium salts are present in excess in the blood current of uræmic patients, and that toxic injections of potassium salts will produce what, up to the present, has been known as uræmic poisoning. We cannot accept either explanation, because we cannot hide from ourselves the broad fact that under the influence of intra-venous injections of

any alkali, carbonic acid gas is so rapidly evolved into the blood current, that the pneumatic acid of the lung tissue cannot liberate the whole volume of the carbamide, and as a consequence, the comatose condition which we meet with in uræmic poisoning is induced. Then, too, coma and eclampsia are not synonyms. In candidates for puerperal eclampsia, we find a partial or complete suppression of urine with a uriniferous, ammoniacal odor evolved from the body and excretions; convulsions follow if the suppression is not relieved. Now we cannot produce convulsions by subcutaneous injections of either normal urine, or ammonium carbonate, but by a mixture of both, or by a subcutaneous injection of ammoniacal urine we can readily simulate an attack of eclampsia. Thus, then, it would appear that by the retention and re-absorption of the products of dis-assimilation, the urea of the blood current is decomposed into ammonium carbonate and carbonic acid, and a urino-ammonæmia generated. During pregnancy, too, the nervous system is continually storing up a reserve force to carry the patient through the parturient act, and the urino-ammoniacal products, by directing this latent energy in improper channels, give rise to that state of exalted reflex irritability which we call "puerperal eclampsia." Chloroform fits in here like a statue in its niche. The anæsthetic, by irritating the diabetic centre in the medulla oblongata, produces glycosuria. This glycosuria, in turn, prevents the further decomposition of urea and aids the system to overcome the morbid effects of misdirected animal chemistry. Thus, then, the good effects of muscular relaxation are not the only gains from administering chloroform in puerperal eclampsia.

Since the British queen, while giving birth to her eighth child in 1853, forced her accoucheurs to give her chloroform, the practice has become fashionable, especially in England. It has been urged that we thus silence the pains of labor, and that those pains are necessary to the expulsion of the child, consequently we should not administer the anæsthetic. One moment's reflection will show us that the terms "pain" and "uterine contraction" are not synonymous. In fact the pains of the first stage of labor are usually referred to the lumbar portion of the spine, and ice-bags placed in this region will relieve the pain without retard-

ing the labor. Chloroform is often administered at this stage, but surgical anæsthesia must not be produced; our objective points being to blunt susceptibility and relax a rigid os uteri. This accomplished, then we must cease: if we do not, we will produce complete relaxation and invite post-partum hæmorrhage. In ordinary surgical cases, however, hæmorrhage is lessened by using chloroform as an anæsthetic, but the accoucheur cannot avail himself of its coagulating properties. The reason of this is in part anatomical: the maternal arteries and veins at the placental site are not connected by capillaries. The pains of the second stage of labor are generally due to forced dilatation of the soft parts, and it is at this time that we usually administer chloroform. The method should be intermittent, that is, we should remove the inhaler as soon as the pain has passed off. A sort of numbness of the parts is all we wish to obtain, and this point reached is quite sufficient.

After the preliminary increase of arterial tension produced by chloroform, the circulation becomes slower, the leucocytes oscillate and are arrested first in the capillaries, then in the arterioles, and finally in the larger vessels. The red globules agglomerate and form magmæ, which disappear when the pulsations become normal. The blood-vessels, owing to the absence of vaso-motor impulse, become constricted in calibre, and if anæsthesia be carried beyond surgical limits, vascular areas, which were well marked when the circulation was active, grow paler and are gradually effaced. This last explains why cessation of hemorrhage is a signal of danger. Those coagulating and constricting properties, however, recommend chloroform as *the* anæsthetic in all operations on the eye. The same, too, has been turned to advantage in connection with Esmarch's bandage in the treatment of external aneurisms.

The number of deaths which have occurred under chloroform, and I may add ether, under the first stroke of the surgeon's knife, leads us to inquire—Is it or is it not better to commence to operate before surgical anæsthesia has been obtained? The gravest accidents from anæsthetics are cardiac and respiratory syncope, but each form is brought about by an entirely different mechanism. Cardiac syncope is the result of a complete reflex act, and is by far the graver of the two. The mechanism of production is the following: Through

shock to a sensitive nerve-fibre, a centripetal impression is carried to the rachidian bulb and there transformed into a centrifugal current which, on passing down the vagus, inhibits the heart in diastole. What makes cardiac syncope so dangerous is that the heart is already too feeble to empty its ventricles at each systole, the excito-motors of the heart are not in a physiological state, and are so thoroughly overpowered by vagus inhibition that they fail to respond. To use an Americanism—The excito-motors of the heart come up groggy, and are "Sullivaned" by the first pass, which causes powerful vagus inhibition. Let me correct what was an error in practice by saying, that vagus inhibition may readily be produced by faradization of the phrenic nerve by an electrical shock to any portion of the periphery, the patient being under chloroform; consequently, in either form of syncope, we should never employ the faradic current. From the foregoing data we must conclude that we should never commence to operate until surgical anæsthesia has been reached. Surgical anæsthesia may be defined as loss of consciousness, complete abolition of sensibility, of voluntary movements, and of reflex action in the nerves of the "life of relation." To guard more carefully against cardiac syncope, it is our duty to give our patient, before placing him on the operating table, a hypodermic of atropine as a vagus paralyzer, and, if you wish, a glass of good liquor as a heart stimulant. With these precautions and with pure chloroform properly administered, there is no danger of cardiac syncope, or contra-indication from heart disease.

In respiratory syncope the centripetal excitation is carried to the rachidian bulb and there arrested. The reflex act is not completed. Centripetal excitation is not transformed into centrifugal incitation. It is usually due to anæsthesia being too profound, and as a rule can be overcome by resorting to artificial respiration. As patients under morphine require less chloroform to produce anæsthesia, a hypodermic of this alkaloid is indicated as a prophylactic against respiratory syncope. Our hypodermic, then, should contain—morphia $\frac{1}{8}$ gr., atropine $\frac{1}{16}$ gr.

I can best conclude this paper by giving as a *résumé* the following practical rules of procedure, which I take from the *Gazette des Hôpitaux*, of Paris:—

1. The compress is to be preferred to all other

means; a handkerchief is to be had everywhere, and alarms the patient less than anything else. 2. Fold the handkerchief into the form of the mouth of a horn, and keep it closely pressed against the point of the nose, but pour the chloroform only on the part of it which is not directly in contact with the skin. 3. Its application should be intermitted, but this need not be done in the precisely regulated manner recommended by Prof. Gosselin. 4. Give very little chloroform at the commencement, in order to accustom the patient to it, and prepare him for the feeling of suffocation. Then when the first inspirations are over, pour on the chloroform very often, otherwise much time will be lost, and complete anæsthesia obtained with difficulty. 5. Before commencing the application, take care that no article of dress constricts the patient, removing even the string of a cap. 6. Expose the epigastrium, and from the very commencement keep the eye on it, and *constantly* watch the respiration without caring about the pulse. 7. Always have a forceps within reach. 8. As soon as the respiration becomes noisy and stertorous, remove the compress and allow the patient to breathe fresh air for a time. 9. When respiration is arrested, seize the tongue with the forceps and draw it out, and immediately commence artificial respiration. If the respiration is not re-established after a few minutes (seconds), place the head low, forcibly flagellate the cheeks, keep the tongue out, and continue the artificial respiration for five, ten, fifteen, or even twenty minutes, if necessary. 10. When respiration is noisy, pass into the back of the throat a sponge mounted on a forceps, in order to remove the mucosities existing there, as they frequently do in patients suffering from colds. 11. There is but one contra-indication to the employment of chloroform, viz., advanced phthisis. Affections of the heart are not contra-indications. 12. Hysterical subjects should be distrusted. 13. Alcoholic subjects are very tedious and difficult to bring under the influence of chloroform, but they are not dangerous.

GASTRORRAPHY AFTER GUN-SHOT WOUND OF THE STOMACH.

BY P. MANSON, M.D., VIRGINIA CITY, NEV.

I was called in haste on August 3rd, 1883, to see J. F., æt. eleven years, who was accidentally

shot at a foot race from the careless handling of a large-sized forty-four calibre revolver in the hands of another party. I arrived about twenty minutes after the accident; Dr. Hall was also in attendance a few minutes before me. We found the patient suffering intense agony, with two large external wounds. The aperture of entry was on the left side, between the tenth and eleventh ribs, and the aperture of exit in the centre of the linea alba, an inch below the ensiform cartilage. From the latter wound there was a protrusion of omentum with slight discharge of bloody fluid, which seemed to have come from the stomach or upper intestines. Gas was also occasionally escaping from the anterior wound. The pulse was good.

It was very evident that there was a perforating wound of either the stomach or intestines. We suspected the stomach, from the fact that the course of the ball between the two external wounds would be in close proximity to that organ. There were frequent efforts at vomiting, but nothing ejected by the mouth except a little mucus, notwithstanding he had shortly before eaten his lunch. In consultation we were agreed that there was perforation of some of the abdominal viscera, with extravasation into the peritoneal cavity. We advised enlarging the external wound, suturing intestinal or gastric lesions and cleansing the peritoneum of any foreign matter, as being the treatment that would place the patient in the most favorable condition for recovery. The boy's parents had not arrived, consequently we had to wait until they came. In the meantime we tried to relieve the patient's suffering by hypodermic injections of morphine, and to sustain his strength by hypodermic injections of brandy. His father who was at work some three miles distant arrived in about three-quarters of an hour. We stated the nature of the case to him, advising the operation as being the only treatment that would place the boy in any possible condition to recover. He hesitated to give his consent to such an operation, and as time was precious we suggested that more counsel might be agreeable to him under the circumstances. At his request Dr. Bronson was called in. After examining the case he at once agreed with us as to the course of treatment. The mother having in the meantime arrived, both parents were reconciled to leave the case in our hands. The morphine, one-eighth grain hypodermically, had not given

any relief. The poor fellow's suffering was intense. During the past hour his pulse had failed considerably. Spirits good. After placing the patient under chloroform, we made an incision from the lower edge of the anterior wound down the median line, sufficiently large to allow a thorough exploration of the cavity, causing the protrusion of some of the small intestines and the discharge of about a pint and a half of bloody fluid from the peritoneal cavity, mixed up with a quantity of half-digested food. In searching for the cause of this extensive extravasation, we found an extensive laceration two and a half inches long through the anterior wall of the stomach, to the left of the median line, corresponding with the course of the ball, allowing the contents of the stomach to escape into the peritoneal cavity. We could not find any other wound perforating the stomach or bowels. The bullet had passed along the wall of the stomach, laying it open without entering its cavity, passing out at the mesial line. The peritoneal cavity was carefully cleansed, the escaped intestines returned after all foreign matter was removed, and the rent in the stomach closed by continued suture and also secured to the external wound, in hopes of getting additional adhesions to the abdominal wall and more thoroughly preventing any further extravasation into the cavity. The external wound was then closed, dressed, etc.

Our little patient stood the operation well and expressed himself as feeling comfortable. He was now free from pain and vomiting. Before and during the operation he was making frequent efforts at vomiting, but only vomited once afterwards. All that he now complained of was excessive thirst, which continued until his death. The operation did not increase the shock as much as might have been expected. However, his strength continued to fail until three o'clock the following morning, eleven hours after the accident, when he became unconscious, arms slightly convulsed, and died at half past three.

Although this case proved fatal, as all other cases of the same nature have done, still I think that in cases of gun-shot or incised wounds perforating the stomach or bowels, it goes far to show the importance of enlarging the external wound, suturing perforations, and thoroughly removing all foreign matter, not trusting to luck in these cases. What possible chance had this boy to recover

with a rent in the walls of the stomach two and a half inches long, and the contents of the stomach emptied into the peritoneal cavity, without an operation of this kind? And what could be expected from an expectant plan of treatment in a case like this, but the death of the patient? The operation certainly placed this patient in the most favorable, in fact, in the only condition possible for him to recover. In our treatment we were only carrying out the rule in surgery: that no matter how severely the patient is injured, treat him or her as if you expected recovery. In the future, should I be called upon to attend a case of shot or punctured wound of the stomach or intestines, where there was reason to believe that there was extravasation of fæcal or other matter of a dangerous nature, I would not hesitate to recommend the same treatment. In *Gaillard's Medical Journal*, January 13th, 1883, there is an article by J. Marion Sims, copied from the *Brit. Med. Journal*, strongly advocating the importance of enlarging the external wound in all cases, whether shot or punctured, and searching for injured bowel and suturing lesions, and permit me to copy the following quotations from Dr. Sims, giving the opinions of some eminent surgeons on this subject. Otis says of shot-wounds of the small intestines of any magnitude, "the pathological evidence of recoveries achieved by the unaided efforts of nature, even through the establishment of a preternatural anus, is limited to very few instances, of which none are absolutely unequivocal. Therefore, in wounds of the viscus unattended by protrusion, when there is danger of extravasation, the external wound should be enlarged and the wound in the intestine closed by suture."

Dr. J. S. Billings says, in a letter to Otis: "In regard to penetrating wounds of the abdomen where there is reason to suspect intestinal injury, it appears to me to be proper to enlarge the opening, if necessary, to ascertain the nature and amount of injury, to remove foreign bodies and extravasated matter, to employ sutures or ligatures where needed and to cut these short and return the injured viscera. Especial care should be taken to prevent even the smallest particle of fæcal matter from escaping into the peritoneal cavity and to remove such as may escape."

Professor Hunter McGuire expresses himself thus: "Penetrating wounds of the belly are nearly

all fatal, and we must look for some other means of saving life than we now have. If the shock, thermometer, etc., indicate wound of the bowel, cut down and sew it up. You say this is desperate. I answer, the cases justify it. We must do something more than give opium and use ice-poultices."

Dr. H. S. Hewitt says: "It is next to an impossibility when a soldier is wounded in the abdomen, with lesion of the intestines, that their contents should not escape into the peritoneal cavity. I think it admits of question, whether greater effort should not be made to seek out the wound, to close it with silver wire and to endeavor to obtain primary union, while peritonitis and constitutional disturbances are treated on general principles."

Professor N. S. Lincoln declares that, "In punctured and incised wounds, when there is adequately strong presumptive evidence of intestinal lesion though there may be no protrusion, it is the surgeon's duty to enlarge the parietal wound to seek for the wounded intestine, and to close the orifice, if it exceeds three lines, by suture. That in shot wounds of the intestines unattended by protrusion, unless the perforation may be in the iliac region with a reasonable likelihood of implicating the part of the large intestine uncovered by peritoneum and thereby avoiding the risk of intraperitoneal extravasation, it is the safest course to enlarge the tract of the ball and to close the intestinal wound by suture."—[Letters from Drs. Billings, McGuire, Hewitt and Lincoln to Otis, published in "Medical and Surgical History of the Civil War."]

Prof. S. D. Gross says, "When we reflect on the fact, that in all lesions of this kind the great danger is from fæcal effusion and that such effusion is almost inevitable even when the opening in the intestine is of very small extent, the duty of the surgeon, I think, plainly is to enlarge the abdominal orifice, to seek for the wounded tube, and to sew up the cut in the usual manner."

Dr. Sims in his article says, "I would therefore insist in leaving nothing to luck, but to explore and suture all intestinal and bladder wounds alike, under all circumstances." He further says, "In the treatment of perforating shot and other wounds of the abdomen, we should strictly observe the following rules:

"1. The external wound or wounds should be

enlarged as soon as possible and sufficiently, to ascertain the whole extent of the injuries inflicted.

"2. These should be remedied by suturing wounded intestines and ligaturing bleeding vessels.

"3. Diligent search should be made for extravasated matter, and the peritoneal cavity should be thoroughly cleared of all foreign substances, whether fæcal or bloody, before closing the external opening.

"4. The surgeon must judge whether the case requires drainage or not. Generally it will not, if the rules be strictly carried out. We must not forget that fæcal effusion has taken place after intestinal wounds have been sutured, simply because the surgeon failed to find and suture all the lesions. And we must not forget that fatal results have followed enterorrhaphy when thoroughly done, simply because fæcal effusion had taken place before the intestine was sutured and had been left in the peritoneal cavity, producing death as speedily and as certainly as if the lesion had not been found and closed. Therefore it is essential not only to find all lesions and remedy them, but to be sure that we leave the whole cavity of the peritoneum perfectly clean."

REPORT ON MEDICINE, MATERIA MEDICA, AND PHYSIOLOGY.

(Ontario Medical Association, June, 1883).

BY A. HAMILTON, M.D., PORT HOPE, ONT.

THE TUBERCLE BACILLUS.—Within two years, Koch, of Berlin, announced his discovery of a specific cause for pulmonary phthisis in the tubercle bacillus. There being too large a supply of credulity in the ordinary medical mind, this was too readily accepted. Many rushed off to carbolic acid as the specific in therapeutics. The other side of the question has now been heard from. It comes from the Vienna school. Dr. Spina, who has long been chief assistant to Stricker, and whose capability cannot therefore be questioned, maintains, as the result of his observation, that the form of the bacillus is variable, such variations depending on the tissue and the local conditions. The objection is a fatal one, if the variation of form be considerable. The form of a specific animalcule in general has a fixity, by which it is known. Considerable

variation in this shows, unless otherwise explainable, that it is not an animal entity, and so destroys it as a specific cause. From a practical stand-point, Koch's theory has received a severe blow in two cases which have recently occurred at Nothnagel's clinic. In both cases tuberculosis was diagnosed, because bacilli were found in the sputa. Post mortem examination showed them to be examples of bronchiectasis; no tubercles were found at any point. Dr. J. Dreschfeld (*Brit. Med. Jour.*, Feb. 17th) holds that they are absent in non-tubercular chronic pulmonary affections (bronchiectasis, emphysema, fibroid pneumonia, anthracosis, catarrhal pneumonia, and syphilitic disease of the lungs). The probable end of Koch's theory is likely to be laid on the shelf beside the parasitic etiology of diphtheria, and that the verdict upon both will be that cause and effect have been mistaken. The secretions become putrid from heat and the bacilli are there naturally developed as part of the process of decay; they are not causative at all. Satterthwaite, in a paper before the N. Y. Academy of Medicine (*Med. Record*, Oct. 28th, '82), and subsequent discussion, shows that we have not yet sufficient grounds for believing in the bacillary and infective nature of tuberculosis, but that bacilli of a peculiar nature were frequently to be made out in phthisical sputa.

MYXŒDEMA.—Dr. A. McL. Hamilton's article (*N. Y. Med. Record*, Dec. 9th, '82) is a valuable summary of the principal papers upon the newly described clinical entity, myxœdema. He is inclined to the view that the disease is dependent upon a "lesion, primarily, of the bulb, with secondary extension to the postero-lateral columns of the spinal cord and the sympathetic ganglia." He thinks that an associated renal disease is the result and not the cause of the myxœdema.

BY J. GILLIES, M.D., TEESWATER, ONT.

CONVALLARIA MAIALIS, or Lily of the Valley, is a new remedy for heart disease. The active principle is an amorphous bitter glucoside, called convallamin, obtained by treating the aqueous extract of the flowers by alcohol and chloroform. Dr. Sus' conclusions are as follows:

1. It is one of the most active cardiac remedies.
2. In doses of from $\frac{1}{2}$ to $1\frac{1}{2}$ grammes daily of the aqueous extract of the entire plant, it produces

on the heart, blood-vessels, and respiratory organs effects constant and constantly favorable.

3. It produces copious diuresis.

4. Therapeutic indications:—(a) In palpitation due to exhaustion of pneumogastric. (b) In simple cardiac arrhythmia, with or without hypertrophy, with or without valvular lesions. (c) In mitral constriction. (d) In mitral insufficiency, especially when there are pulmonary congestions. (e) In Corrigan's disease, the peripheral arterial pulsations disappear and respiration becomes markedly restored. (f) In dilatation of the heart, with or without (1) hypertrophy, (2) fatty degeneration, (3) muscular sclerosis. (g) In all cardiac affections, indifferently, from the moment that watery infiltrations appear, it is prompt and certain in its action. (h) In lesions with dyspnoea, the effect is less marked. In cardiac asthma, in combination with iodide of potassium, it is most useful. Finally, in cardiopathies with dropsy, the convallaria surpasses all other remedies. It has no deleterious effect and no cumulative action.

Some efficient drug having the action claimed for convallaria is certainly a desideratum in practical medicine.

ADONIS VERNALIS.—Dr. Bubnow believes that adonis is positively preferable to digitalis in cases of organic heart disease; and he finds that, like the convallaria maialis, it is not cumulative in its action. It belongs to the Ranunculaceæ.

VIBURNUM OPULUS.—Hall recommends high cranberry as a powerful anti-spasmodic. It is known among American practitioners as Cramp's bark. It is said to be very effective in relaxing spasm and cramps of all kinds, as asthma, hysteria, cramps of the limbs and other parts during pregnancy; but it is in spasmodic dysmenorrhœa that it seems especially indicated. Hall prescribes a few drops of the tincture for a week previous to the expected time. When the pains begin he gives it every half hour, and if severe, every quarter hour. According to Hall, in neuralgia and spasmodic dysmenorrhœa it has yet to meet with a single case which it has failed to cure.

CAFFÈINE IN HEART DISEASE.—Prof. Lepine claims that caffeine is as efficacious as digitalis in retarding the heart's action and in increasing its force. In comparing the relative merits of the two drugs, he asserts—

1. It acts more rapidly than digitalis, and in fatty heart where the latter is contra-indicated, there is no doubt but that it does good.

2. It is tolerated better than digitalis.

3. Most patients prefer it to digitalis.

Where caffeine produces insomnia it is contra-indicated. To produce benefit the dose must be from 9 to 30 grains.

IODOFORM.—Iodoform is highly recommended in diphtheria. The manner of using it is as follows: It is applied locally to the patches in its purity, with a camel's hair pencil, every two hours. Others use it by spray, in the aqueous solution; in this way it corrects fetor. According to Billroth, we possess no antiseptic, not excepting carbolic acid, that is so trustworthy in making a foul wound sweet.

It is affirmed and denied that it possesses anti-tuberculous properties. It has an influence almost specific over tuberculous swellings and ulcerations. Dr. Henry claims to have cured a number of cases of tonsillar hypertrophy and ulceration by iodoform spray. Its odor is an objection to its extensive use.

BY H. MCKAY, M.D., WOODSTOCK, ONT.

PHYSIOLOGY seems to be recovering from the concentration of effort put forth at the International Medical Congress in 1881. In spite of the anti-vivisection embargo, the past year has shown advances, although chiefly on the old lines.

The Spleen a Portal Heart.—Dr. C. S. Roy has further developed his discovery that the spleen is the seat of perfectly rhythmical contractions and dilatations, independently of cardiac and respiratory movements. That in fact the spleen may be regarded as "a portal heart." This appears to be a new and important fact in physiology.

The Heart's Action.—Cardiac physiology has received a good deal of attention and a new impulse has been given to the innervation and mechanical movements by the opportunity afforded for observing the effects of stimuli directly to its substance in the case that occurred lately in Germany, examined by Ziemssen. A woman, æt. 45, had a tumor removed from the anterior wall of the thorax, which left the two ventricles and part of the left half of the diaphragm exposed. The following conclusions have been formulated: 1. That the contractions are evoked by the stimulus of alkaline blood to its mucous membrane (?), act-

ing through the ganglia of the sympathetic which are in connection with the vagus. 2. That their rhythmical character ultimately depends upon the peculiarity of the muscular tissue; and, 3. That the compensating rest of the heart is due to the nervous structure which might be represented as opening and closing the current.

Important information has been published on "The mean pressure and characters of the pulse wave in the coronary arteries," which appears to settle the question in favor of those who believe "the coronary arteries injected during the systole of the heart and not during the diastole. It is obvious the influence this would have on the nutrition of the heart in valvular lesions.

During the year important additions have been made to our knowledge of the composition of blood, as the discovery of a third or transparent corpuscle; the use of the hæmatocytometer facilitating calculations as to the absolute number of corpuscles in the medulla of bones; also that the white corpuscles contain a ferment that plays an important part in fermentation.

"The location of cerebral function" has occupied much attention, as also "Cross-action of the cerebral nerves."

Dr. Brown-Sequard writes that he is "convinced that irritation of the base of the brain and the adjacent motor regions causes convulsions more frequently on the side irritated than on the other. The superficial parts of the brain produce chiefly cross-convulsions, but irritation in all parts may cause convulsions on the same side, and that the chief foundation for the theory of psycho-motor centres and of the cross-functional relation between the hemispheres and the limbs must be considered to have lost its value; and that the excitor-motor zone of the cerebral surface, and indeed all the excitable parts of the brain, are capable of putting in action the limbs of the same side as well as those of the opposite." This is high authority for an opinion which no doubt will cause surgeons to hesitate before resorting to operative procedure in such affections as epilepsy, paralysis, etc., which it was supposed would be a sufficient guide to indicate the primary lesion or seat of disease.

Function of the Sympathetic.—The sympathetic nervous system, while closely connected with the cerebro-spinal, yet appears to have an independent action of its own. This is well illustrated by the

fact that the foetus may arrive at the full time with ample perfection of the functions of organic life, while without any trace of brain or spinal cord. Observations also lead to the conclusion that the sympathetic enters largely as a factor into all functional and organic diseases. Dr. F. L. Fox, in his Bradshawe lectures, lately delivered, showed that Dr. Woakes' idea that the "inferior cervical ganglia is a correlating nerve centre," may be expanded thus: the influence of emotion may be seen on the cervical ganglia (blushing), on the cardiac nerves (palpitation), on the splanchnic, on the abdominal plexus, and especially on the vesical ganglia. He has also shown that, although the sympathetic may not be considered as a cause, it is a chief factor in inflammation by causing dilatation of the blood vessels.

BY W. MORTON, M.D., WELLESLEY, ONT.

ABORTED TWIN PREGNANCY.—The accompanying specimen, manifestly that of a human foetus in the early weeks of its development, was passed from the vulva by a married woman, æt. 26, without pain, or other premonitory warning, at the breakfast table and unexpectedly. Seven or eight months thereafter she gave birth to a child at full term. The question arises: Is it a case of twin intra-uterine pregnancy, one of which aborted? like the small green apple falling from its fellow. The last catamenial period terminated on March 11th, 1882. Coitus occurred on March 13th, and again on March 29th and at no other time in the interval. The foetus was expelled April 10th. Delivery of a healthy and fully developed female child occurred on December 20th, 284 days after the last catamenia, and 254 days after the abortion. This specimen is presented by Dr. Wm. Morton, of Wellesley, who states that, having been intimately acquainted with the family for years, he can vouch for their veracity and intelligence.

IMMUNITY FROM INFECTIOUS DISEASES.

BY PROF. R. RAMSAY WRIGHT, M.A., B.Sc., UNIVERSITY COLLEGE, TORONTO.

Review, translated and condensed, from *Biologisches Centralblatt* for September.

I. A New Theory of securing Immunity from Infectious Diseases.

II. The Etiological Therapeutics and Prophylaxis of Pulmonary Tuberculosis.—H. Buchner, Munich and Leipzig, Oldenbourg, 1883.

The above-named *brochures* of Buchner have so much in common with each other that they may be discussed together. Buchner sees in the recognition of fungi as the cause of certain diseases, the greatest triumph which medical science has achieved in our century, but finds that the practical therapeutical consequences of the theory have been so far only very incompletely deduced. The attempts in this direction have hitherto been made in false directions—they either strive after protective inoculation, or direct combating of the fungi by the employment of antiseptics. It appears to be impossible to protect against all infectious diseases by inoculation; at any rate, it would be simply instituting a lesser evil for a greater. The internal use of antiseptics again is positively hurtful, for the poisonous action of antiseptic materials affects the tissues much earlier and more intensely than it does the much more resistant fungi. The very numerous cases of spontaneous cure of infectious diseases show, however, that there are circumstances under which the progress of a fungus-vegetation in the body is rendered impossible. Therefore it ought to be easy enough under favorable circumstances to prevent the beginning of such a vegetation, *i.e.*, to secure immunity. What means does nature adopt in her struggle, so generally successful, against the invasion of fungi? According to Buchner, inflammation is the weapon of the organism in such cases. The correctness of this view is established by an experiment made in 1877, which, however, he has not since repeated: A thread, impregnated with decomposing meat-decoction, was drawn through the middle of a rabbit's ear. When in a few hours the place in question was inflamed, the carotid of the same side was ligatured, and some of the same fluid then injected subcutaneously into the upper part of the ear. The result of these operations is gangrene of the ear; the gangrene, however, extended only over that part of the ear situated above the area of inflammation—the *part inflamed* proved itself an impassable barrier to the bacteria, so much so that the tissue lying below it remained unaffected. The inflammation caused in the first place by the bacteria is thus a self-protective reaction on the part of the organism, and in each case the question

will only be, whether the inflammatory reaction can take place in the desired way, or whether the fungus-vegetations are so vigorous that they push aside the tissue cells and prohibit the inception of the reaction.

From this point of view Buchner attempts to answer the interesting question how it is that immunity from an infectious disease is conferred by a previous attack. The theories hitherto proposed he considers insufficient; he pictures to himself the process as follows:—When pathogenic fungi get in anyway into the circulation, they are carried by the blood into the different capillary plexuses, where they remain, endeavouring in struggle with the tissue cells to effect a settlement. The different kinds of tissues will, however, conduct themselves differently in relation to any particular fungus. Most fungi will be able only to survive the competition in one kind of tissue, but will perish in all others. In this one tissue the reactive inflammation will develop itself. This leaves behind it a permanent alteration which prevents a second invasion of fungi; and as the organ in question is the only possible channel of entrance for them, the purely local alteration is thus the cause of the immunity of the whole organism.

Buchner's reviewer (G. Kempner, Berlin) points out that many known facts range themselves against this explanation (*e.g.*, the tendency towards recurrence of erysipelas), but considers Buchner's suggestion as to inflammation protecting tissues against the invasion of bacteria, well worthy of attention and experimental investigation.

Buchner believes that nature's curative process may be imitated by the administration of arsenic, which in small repeated doses produces the first stage of inflammation in the tissue cells, *i.e.*, increased nutrition and activity, in which condition they are better fitted to engage in a struggle with invading bacteria. Buchner has found arsenic of the greatest service in tuberculosis; he gives daily 10 mg.* of a watery solution of acidum arseniosum 1 to 2,000, attaining this dose in a few days. He believes the therapeutic value of arsenic in malaria, skin diseases, &c., to be also due to its property of exciting inflammation.

*10 mg. = 1-7 gr

“One science only will one genius fit;
So vast is art, so narrow human wit.”

TREATMENT OF HYDROCELE AND NÆVUS.

BY THOS. R. DUPUIS, M.D., ETC., KINGSTON, ONT.

I find hydrocele of the tumia vaginalis testis a comparatively common disease, and being very annoying on account of the inconvenience and deformity which it entails on the sufferer, it is desirable to have a quick, safe and efficient cure.

Several methods have been in use at different times and places, such as incision, excision, actual cautery, seton, and injection of the sac with various liquids after evacuating the fluid.

I have tried incision, the injection of iodine after tapping, the seton without first evacuating the contents, as recommended by Henry Smith, and the seton after evacuation of the contents, as recommended by Prof. Gross, of Philadelphia.

By each of the foregoing methods I have secured radical cures, but with varying degrees of trouble, the last one having proved, in my hands, the most speedy and certain. I have operated on hydroceles containing very various quantities of fluid, the greatest being ℥xxviii., and the smallest from ℥iii.-iv., and I have no reason yet to substitute any other method for that of the seton *after tapping*.

In operating to cure a very large one, I should first simply tap and evacuate the contents, and allow the sac time to partially fill again before ultimately tapping and inserting the seton. The reason for this is obvious. The method of using the seton which I am now advocating, is best given in Dr. Gross' own words: “The operation which I prefer to every other, both on account of its simplicity, its freedom from danger, and its never-failing certainty, is performed in the same manner as by injection, except that the puncture is made a little lower down. After all the water has escaped, the canula is pushed on towards the superior part of the scrotum, where a counter-aperture is made by the re-introduction of the perforator. The instrument being withdrawn, a piece of braid, or narrow strip of muslin is passed through the canula by means of an eyed probe. The operation is finished by removing the canula, and tying the ends of the seton loosely in front of the scrotum.” . . . “Let the seton remain for twenty-four to forty-eight hours, or until the scrotum is quite hard, and at least one-fourth as large as be-

fore the operation. The part should meanwhile be well suspended, and the patient kept on his back. For the first few days after the removal of the seton, fomentation of acetate of lead and opium are the most eligible, and these may be gradually, but cautiously, succeeded by spirituous lotions, dilute tincture of iodine, or mercurial ointment. The cure is usually completed within a fortnight." Dr. Gross states that he has performed this operation many times, and has never known it to be productive of any ill effects, and to this testimony I can also add my own limited experience, and say positively that I have never witnessed any bad results from it. In not over three cases, too great an amount of inflammation has retarded the cure, but in every one of these the patient himself, and not the operation, was to blame. In one instance the patient walked a distance of ten miles the second day after the operation; in another the patient, immediately after the operation rode home, a distance of thirteen miles, and then went to choring about his farm; in the third the seton was left in the scrotum too long a time, namely, about four days.

They all got perfectly well, however, although their recovery was somewhat delayed. But accidents like these might happen after any method of operating, and perhaps with less favorable results.

I have used this method almost exclusively in hospital for the last five years, and in my private practice for about ten years, having several times used it where an injection of iodine had failed, and all that I have operated upon have so far remained perfectly free from any return of the disease. I think so much of this plan, that in my clinics at the Kingston hospital for the last four years, I have recommended it, to the exclusion nearly of all other means.

My apology for publishing this simple article in your columns is, that in conversation with other surgeons, I have found many who have never practised this operation, and some who have never heard of it, and believing this to be the best operation known, taking everything into consideration, I am persuaded that it is not amiss to direct attention to it in this manner. I may say in conclusion that other things besides these mentioned may be used for a seton, as a piece of silk twist, two or three coarse linen threads, or a piece of small twine.

Some of your readers may remember the case of a child eight months of age, with a nævus upon its upper lip, which I presented to the surgical section of the Canada Medical Association, Kingston, in Sept. last.

The tumor was about the size of a ripe cherry, situated to the left of the mesial line, and midway between the ala nasi and the margin of the lip, forming a purplish, semi-globular projection, externally, and causing a bulging of the mucous membrane internally, and becoming tense and more marked in color when the child cried. I knew very well that small and large nævi admitted of different modes of treatment, but my mind was unsettled as to the propriety of removing this by excision, and hence I was desirous of getting the opinions of several experienced surgeons respecting the best treatment of this particular case. Nearly all that examined it, agreed that cutting it out would be the quickest way; but some objected to this on account of the bleeding that might ensue, and others on account of the scar or deformity of lip that might result, and the majority seemed favorable to cauterization or electrolysis, rather than cutting. Dr. Hingston asked me how I intended to treat it. I told him that I had thought of excising it, but since hearing the opinions of other surgeons, I had half a mind to use the cautery. He said if it were his case, he would unhesitatingly cut it out, but if I inclined to cauterize it, he would advise the use of Paquelin's thermo-cautery.

As I had just finished the cure of a nævus, situated above the eyebrow, on a child a year old by the thermo-cautère, I dreaded the frequent applications that would be necessary, especially in this case, and the scar that would almost unavoidably result from the eschar, and decided at once to excise it. On the 12th inst., assisted by my partner, Dr. Henderson, I removed with a pair of scissors a triangular piece the whole thickness of the lip, including the nævus, with the apex at the nostril and the base at the margin of the lip, and brought the edges of the wound together with pins in the usual manner. Bleeding was free but easily controlled by the pins and ligatures, and the healing of the wound has been rapid and perfect, to-day there being only a seam to mark the site of the tumor, and this in a few months will be scarcely perceptible. The interest in this case centres

in the differences of opinion given by eminent surgeons as to the best way of dealing with such an affection, and the satisfactory result which has followed the quickest and certainly the simplest method of getting rid of it.

Correspondence.

To the Editor of the CANADA LANCET.

SIR,—I observe a printer's error in my communication of last month in regard to date which I would feel obliged if you would correct. The sentence reads as follows: "In 1822 the students of the Toronto School of Medicine did meet in friendly competition students of another school (Trinity) in the fourth year's examination, with the result that the Toronto School students did not obtain either of the two gold medals." It should read: In 1882 the students, etc.

Yours, etc.,

PRACTITIONER.

London, Oct. 20, '83.

GRATUITOUS MEDICAL SERVICES.

(To the Editor of the CANADA LANCET.)

SIR,—I would like to ask you or some of your numerous readers who have facilities at their disposal to give a description or account of the differences and resemblances in the *gratuitous* medical services, *rendered to those well able to pay*, in connection with our colleges, hospitals and boards of health. Also, how to reconcile such *gratuitous* services with the "Code." It appears to me nothing corresponding obtains in any other than the medical profession, and as far as I am able to judge the medical profession is not only much injured but much lowered in public estimation by the practice.

Yours, etc.,

October, 1883.

M. B.

Reports of Societies.

MICHIGAN STATE BOARD OF HEALTH.

Reported for the CANADA LANCET.

The regular meeting of the State Board of Health was held in Lansing, Oct. 9, 1883, the following members being present: Arthur Hazle-

wood, M.D., of Grand Rapids; C. V. Tyler, M.D., of Bay City; J. H. Kellogg, M.D., of Battle Creek; and Henry B. Baker, M.D., Secretary.

The secretary presented his annual report, showing valuable accessions to the library by gifts and exchanges, also his quarterly report of work done in the office.

The Board was invited to hold a Sanitary Convention in Hillsdale; also to hold it in Ionia. Both invitations were accepted, and it was decided to hold the one in Ionia early in December.

The Board was also requested to translate the documents on the prevention of contagious diseases, in the Scandinavian and Finnish languages for the use of miners and others who do not read English, and among whom both scarlet-fever and diphtheria are now present.

It was decided to hold a meeting of the Board in Detroit, Nov. 13, to attend the meeting of the Public Health Association, and to transact such business as may come before the Board.

A communication from the Chairman of the Ontario Provincial Board of Health gave notice of a Sanitary Convention at London, Ontario, Nov. 16 and 17. Drs. Baker and Hazlewood were appointed to attend this convention.

The secretary presented a resumé of the work of other Boards of Health:—

The Boston, Mass., Board of Health has lately placed measles on its list of diseases to be reported to the Board by householders and physicians. That Board has publicly offered to superintend the process of disinfection, if requested to do so by the householder. Dr. Kellogg thought it desirable that Boards of Health superintend disinfection after contagious diseases, where possible. He thought disinfection by sulphur would be more efficacious, if carried on in a moist atmosphere.

Selected Articles.

CLINIC ON SKIN DISEASES.—BULKLEY.

Case I. PSORIASIS TREATED WITH CHRYSOPHANIC ACID.—This case is very interesting, from the fact that, without our intending it, we have had quite a remarkable improvement in the eruption from a treatment which has been advised, but which has not been frequently employed—namely the internal use of *copaiba*. The patient came here first

on account of gonorrhœa, and not for his psoriasis, which he had had for twelve years, and was put on the treatment for gonorrhœa—on what is known as the Lafayette mixture—a mixture containing an alkali and a little spirits of nitre. When he first came, on April 12th, the psoriasis was in full bloom, very much more marked than now. He was given the mixture of copaiba, but with no local treatment, and as his gonorrhœa diminished his psoriasis greatly improved, so that now his eruption is not of half or quarter its former extent. He says there are no new spots, and, as you see, the eruption is fading. His name is J. B., aged twenty-four. He has had psoriasis for twelve years, with occasional improvement, followed by relapses or increase of the eruption from time to time, it having never entirely left him since its first appearance. What I show you now is not the eruption of psoriasis as you are apt to see it; it has decidedly faded, some of the spots have disappeared, and many are much broken into. On the elbow you will still find the white, slightly adherent, imbricated scales, which very readily come off with slight scraping; they are seated on a red base, which, as always, is perfectly distinct and sharply defined, and not with the indefinite outline commonly seen in eczematous patches. On scraping off the scales lightly we soon come to a membranous pellicle, which is adherent, and, if the scraping is carried still further, this comes off and is followed by the appearance of a drop of blood. The eruption, as you see consists of dusky-red spots, of a size varying from that of a minute pin-head to almost any size, always sharply defined, tending to cover themselves with a white scale, which, on being scraped off, leaves a red base, which bleeds very readily. Remember that the separate spots of psoriasis always appear first as small points, gradually enlarging, and that even when seen as patches of large diameter they have always thus begun; in some localities you may observe the mode of disappearance of the eruption, it gradually fading out, the scales ceasing to form, and finally the redness itself vanishing. We see on the legs very much less eruption than is usually seen on these parts; as a rule, in psoriasis, the legs have more of the eruption proportionately than the body; almost always the patches are larger on the lower extremity, more scaly, and of a darker hue.

Differential Diagnosis.—Why do we speak so confidently of its being psoriasis, and state that it is absolutely impossible that it could be anything else? The reasons are found in the character of the lesions, taken in conjunction with the history of the duration of the eruption. There are only four eruptions which could with the slightest reason be supposed to be the one before us; these are: A squamous syphilitic eruption, an eczema, a ring-worm, and psoriasis. First, of syphilis: This man has had the eruption for twelve years, with varying

severity, and this eliminates syphilis absolutely, as such a general syphilitic eruption never continues that number of years. You may have an ulcerative syphilide for five or more years, but never an acute, distinct form of this kind. In the next place, the syphilide would be on the flexor and extensor aspects alike, while in psoriasis the extensor surfaces are always the seat of preference. In the general large papular eruption you could never have any such extensive patches of disease as are seen on this man's legs. Second, in regard to any possible form of eczema which might be mistaken for the present eruption. Eczema seldom, if ever, presents so many separate points of eruption as are seen here; and it may be said that it never exhibits so many of such small size and so sharply defined. Upon some portions of the body psoriasis may resemble eczema, and you see the characteristics it very commonly may take on on the lower extremities—namely, the patches are larger, more dusky-red, and of more undefined outline, often more resembling an eczema of the lower extremity. It would be difficult, but not impossible, to make the diagnosis from the eruption on the lip alone. In certain points this eruption might be thought to resemble ringworm, but yet you would certainly not have such a vast expanse affected with the parasitic disease, and an examination of the scales by the microscope would show the parasite in the latter. The individual spots present differences from those of body ring-worm in the pearly character of the scales, the absence of a clearing in the centre, and rather livid redness of the base of the psoriatic spots. We then make the differential diagnosis from syphilis, eczema, psoriasis, and ring-worm; and, recognizing the lesions of psoriasis, we conclude with certainty as to its nature.

This patient continued the use of balsam of copaiba until the eruption was a good deal faded and broken up, and some weeks ago he was put upon another treatment which has recently been advocated. He has been under the internal use of chrysophanic acid, which has been reported on favorably by several observers, some claiming brilliant results from it. I have several patients under this treatment, but can not yet speak definitely concerning it. He began with a quarter of a grain, in a powder with sugar of milk, taken three times a day directly after eating; and a week ago I doubled the doses. It is best always to begin with a quarter of a grain, and after a few days give half a grain, and then a grain, until some effect is produced on the stomach and bowels. Some patients are said to have taken up to four or five grains several times daily. When you get to five grains there is sure to be purging and vomiting. He is under this treatment, and has not had any effect from it as yet; but we shall continue it for some time to come, and I propose to push this treatment in as large a number of cases as possible. I wish to give

you at present time the diagnosis and treatment in these cases as we see them, and the theory of treatment I will give you later in the course.

CASE II. ECZEMA RUBRUM.—I bring you this woman to show you a leg which is scaly. It is a case of eczema rubrum of the left leg. She is forty-three years of age, attends to her own household work, being therefore more or less constantly on her feet, and has an eruption only on this leg. I merely want to show you that, although an eruption is scaly, although it is red, it may not be psoriasis. No case of eczema ever becomes psoriasis. The patient states that she had erysipelas eleven years ago, and that it broke out again two years ago and settled in her back. You will see a great many cases which are called erysipelas, and chronic erysipelas, of the face, etc. We all know there is no chronic erysipelas. It may be chronic by recurrence, but not such an affair as this. This is chronic eczema, which never presents numerous well-defined, sharp patches. See how uneven the edge is, and how it shades off into unhealthy skin; you get a certain amount of erythematous skin, you get it on one half of the body, or, if on the whole body, in continuous patches. This is erythema rubrum, and is one of the cases which, of all others, are perfectly treated with the rubber bandage. I am sorry I can not put it on to-day, to let you see how to do it. I am afraid this patient does not put it on tight enough. If this leg were exposed to the open air it would crust over, and if closed up at night there would be a surface that would exude moisture. Leave it alone and exposed to the air and that moisture tends to dry. If she had left it alone, untreated, and had scratched it, it would have a large crust; if treated with the rubber bandage there would be no crust upon it, but the scales would come off on removal of the bandage. She states that she left off the bandage for over a year, and that the leg was in as good condition as this until August; but in August, from over-fatigue, she had the eruption develop in spite of the bandage. The tongue is quite indented, and considerably cut; her bowels act every day; her water is much colored, and stains the vessel considerably. She is taking some medicine, but I do not know what it is. We expected her to say the water was stained. Most of the cases of eczema of the leg are connected with highly colored urine, with a heavy sediment of lime, or some other deposit, from imperfect elimination by the kidneys. It always recurs from over-fatigue or over-exertion.

Differential Diagnosis.—There is nothing like this disease at all, except psoriasis, and that does not come in such a profuse form.

With regard to *local treatment*, the bandage is the great thing; it is an invaluable addition, and she would hardly know what to do without it. We shall later on have an opportunity to see it put on; and then I will speak of the mode of treatment.

For *internal treatment* you generally give diuretics, a cathartic, and usually some tonic with all.

CASE III. ECZEMA RUBRUM, WITH VARICOSE VEINS.—Mrs. D. aged fifty-two. She had a milk leg—that is, the left leg was affected twenty-two years ago, and again nine years ago. About December 1, 1880, an ulcer made its appearance on the left leg from which there are large scars, and an eruption shortly appeared after it, and gradually extended up the leg, involving the greater part of the leg when first seen, January 1, 1881. I show you these patients that come back to us, as they are instructive. We get them well to a certain extent; they leave, and there is a relapse. Many of the eruptions have a predisposition to return. She first came to see us January 26, 1881, and was here under treatment for two or three months. She got well under the rubber bandage, then she disappeared, and we did not see her again until September, 1882—a year and a half, which is, of course, a good immunity for a person who is on her feet all the time. The trouble came back in September, and it began on the 22d, four days before she was seen. Here we have the same lesion as in the former case, accompanied with varicose veins, with very considerable varicosities of the feet. We note here an erythematous condition, which disappears entirely on pressure and readily returns on taking away my hand. You notice the œdema of all the parts. Most cases of eczema of the leg are associated with œdema, which is not necessarily owing to kidney causes. In this instance it is secondary to the milk leg, or phlegmasia, she had first twelve years ago, and again nine years afterwards. I think, if we want to have our patients remain cured, we must require them to wear the bandage continually, just as persons with certain deformities of the body require the continual use of a bandage or truss; for as a consequence of leaving off the bandage, we get an affair which seems like a purely local disease. You see some persons with varicose veins who do not have the eruption at all, while others, without having varicose veins, have the eruption. This is, I believe, wholly constitutional. We put her upon the treatment which is commonly prescribed here, and you will hear frequently of it; but I hope you will not consider it routine practice—that is the diuretic treatment. She is taking the acetate of potassium; it relieves the congestion of the skin, and certainly removes the disease. She is now taking thirty grains three times a day, in a little rhubarb-and-soda mixture, which is mainly used. Locally she had applied an ointment of salicylic acid and balsam of Peru. I merely mention that ointment, but can not speak further about it now; it is composed of about half a drachm of salicylic acid and a drachm of balsam of Peru to the ounce.

CASE IV. RECURRENT ECZEMA.—I now show you a case of recurring eczema in a child whom I

showed you last year—a child who, when you saw her then, had an eczema all over the neck. She remained entirely well until this fall. We saw her here last March, with a history that when six months old she had an eruption lasting until eighteen months ago—I am reading the first record of March, 1881—and this eruption had been on the head for twelve months when we saw her. The head was the seat of a squamous eruption, and all the upper part of the neck, back, and chest was likewise affected with eczema rubrum. There is some moisture there now. She is over four years old, and, you see, is an exceedingly small child for her age. When you saw her last year the entire neck was the seat of a moist, exuding eruption. The head was entirely crusted over, and the child was suffering very considerably. There were enlarged glands in the neck, indicating a low vitality and a scrofulous condition. What she shows to-day is a small amount of scaling, which I wish you to look at closely. I want you also to see this eczema of the eyelids in a child, because such patients are taken to oculists and treated with blue-stone for years, while, if treated as eczema, they would get perfectly well. You see here a swelling of the lids which would not be here if it were not for this eczematous spot, and you find the remains of eczema on the lips. That, of course, may vary to any extent; there may be a thickened eyelid, and when you find it in eczematous subjects you can be pretty sure it can not be cured without proper constitutional treatment. There is a slightly reddened condition of the eyelids—a puffiness of the whole region of the Meibomian glands. Now, here we still see a certain amount of redness, and a certain amount of erythematous thickening, as the remains of the eczema. I have not seen her for a long time.

Eczema of the eyelids is treated frequently with stimulating solutions—with nitrate of silver, blue-stone, etc., without effect, until the proper treatment for eczema is used. The erythematous condition of the neck is hardly worth seeing. She is better than she was a year or so ago. It is a little over a year since the child had any treatment at all. The scalp was crusted over and the hair matted down, and there was some eruption on the upper lip and on the arms when she came here, September 20th. She was given the syrup of the iodine of iron, a teaspoonful three times a day, and locally she was to use the ointment which you will see continually used, namely, the tar-and-zinc, two drachms of tar, and six drachms of simple ointment, or rose ointment. That treatment has been continued from the first; she has had nothing but the iodide of iron and the tar-and-zinc ointment. I do not generally use the treatment with the iodide of iron in eczema; that was given in my absence. Although I do not wish to reflect any discredit upon this treatment, yet I do not use it; I do not know why, but I have not been as well satisfied with it as with

other treatment. I shall put the child on a little arsenic and ammonia, or the citrate of iron, or the citrate of potassium and sweet wine of iron, made with Malaga wine, under which, I think, such patients improve faster than under the iodides.

CASE V. GENERAL DIFFUSE PAPULAR SYPHILIDE. —I show you quite a different eruption now, gentlemen, in a case of specific disease. I will say, once for all, that I consider it a good deal better to use the term specific disease, and I only use it for one disease—syphilis. Whenever I use the word specific it refers to that, and that alone; it saves me explanation and uncertainty. It is a case of early general diffuse, or general scattered, papular eruption from syphilis. The patient is a widow. She had one child, who died soon after birth. She has had the present eruption for the past three months. When seen a week ago, all the body, face, hands, neck, arms, and legs were covered with grouped papular syphilide, and she has mucous patches in the mouth. I show you the case, gentlemen, for you to compare with the first case I showed you, the case of psoriasis, which in appearance this resembles to a slight degree. Here is a moist eruption which somewhat resembles psoriasis, but the scales of specific disease are always slight as compared with psoriasis. Specific disease does not tend to cover itself with scales, except in the tubercular form. This is a little dark, a little large, and a little too prominent to be confounded with psoriasis: Here is a very interesting point: you find here what is termed psoriasis palmaris syphilitica. Now, in any case of psoriasis you will find spots like that developed in the palms of the hand. If there is doubt in your mind, *there* is a point which would argue nine out of ten times in favor of its being specific disease. This is a general, large specific papulide. This woman's primary lesion must have attacked her within six months. There is no eruption on the soles of the feet. There is sometimes seen a little circular grouping of the lesions, but it does not happen to occur in this case; when it does occur it is perfectly pathognomonic. Here is the general large papular syphilide that might have been covered with more scales, and might in certain other cases represent psoriasis. Here is a wax model of the lesion; They call it *syphilide palmaire*, but there is no propriety in calling it that. Now, you notice I have made this diagnosis without a word from her. I do not care whether she had the primary lesion or not; there are characteristics which are absolutely positive. You will see the spots are solid, and are erythematous, and disappear on pressure; they are not stains; they may be acute and new, and there are also some stains left from the former lesion. There is some little analgesia, or loss of sensitiveness to pain, during the early acutely developed phases of syphilis. It is more common in women than in men. I have patients on this platform into whom I could stick

a pin without their knowing it. There is entire loss of sensitiveness. We have here a general diffuse papular syphilide on the face, as well as on the body, and I should suspect the face if there were none on the hands. There are features here which might be mistaken for those of acne, and might be something else; but one point would lead us to diagnosticate syphilis, and that is the scattered appearance which the lesions present—I mean covering the whole face. You see an acne group, but never see an acne on the lip in that way. She is under the "mixed treatment." I believe in giving her a slight amount of hydrargyrum early in the disease, and I believe occasionally a little iodide added to it will help the disappearance of the eruption. She is taking a mixture with a little iodide in it, because it does hasten it, in my judgment. She has been under the treatment only a week or ten days, and the eruption is getting somewhat less than it was.—*N. Y. Med. Jour.*

THE DOME TROCAR IN OVARIOTOMY, PARACENTESIS, ASPIRATION, ETC.

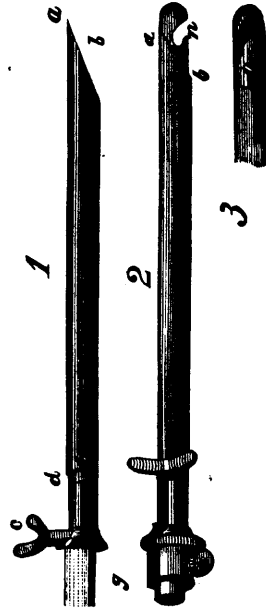
BY S. FITCH, A.M., M.D., EDIN., HALIFAX, N. S.

We reprint the following from the Transactions of the International Medical Congress, in order to bring again to the notice of the profession an ingenious and useful instrument, the value of which is not as well known as it deserves to be. After giving a history of the invention of trocars in general and the improvements in his own instrument, the author proceeds as follows:—

I now announce a most important modification of the double tubular trocar, which avoids the danger of the open canula, and by which the instrument, while performing its highest achievements of discovery and cure, may be used as a trustworthy exploring probe and sound; and which will, I believe, in time supersede every other form of the instrument. Retaining my first improvement of making the outer canula the puncturing, or rather the incising, trocar, I have had the distal orifice, or open top, of the *inner* canula closed over by a rounded or dome-shaped roof, so that, when it is projected beyond the cutting point of the outer canula, the two tubes fit closely together, and the end of the combined instrument feels perfectly smooth like the end of a rectal sound, or catheter, or probe, and may be freely moved within the cavity penetrated, whether this be an ovarian cyst, a uterine fibro-cyst, the abdomen, the thorax, the bladder, a joint, or even the pericardium, without danger of wounding any viscus or organ, puncturing any vessel, or even scratching or abrading

the lining of the cavity, or of any parts contained therein.

The base of this *dome* being of the same external circumference as the inner tube, of which it is the continuation, and fitting the outer tube accurately, there can be no escape of fluid till the dome is advanced or pushed out so as to occlude and shut out the cutting point of the outer tube; then there is disclosed by this movement a fenestra, or oval aperture on *the under side* of the inner tube, just



Figs 1, 2, 3, represent the dome trocar. Fig. 1 shows the cutting point (*a b*) of the outer canula advanced, ready for puncture, with the dome of the inner canula retracted, shutting the instrument just behind the point (*b*) against ingress or egress of fluid; *c* is the thumb-rest for projection and retraction of the dome by the thumb of the hand holding the instrument; *d* is a slot with a knob regulating and fixing the dome and point in any desired position; turning the knob one-half revolution into the proximal transverse slot allows the tubes to be separated for cleansing and oiling. Fig. 2 has the thumb-rest pushed forward and turned into the distal branch slot, projecting the inner tube and dome, sheathing the cutting edge and point (*a b*) of the outer canula, and disclosing the fenestra (*n*) cut out of the under and side walls of the inner canula; *n*, in Fig. 2, and *o*, in Fig. 3, show the curved process of the lower wall of the inner canula, underlying the proximal third of the fenestra, to prevent occlusion from contact of cyst-wall, or vein-wall, or any floating substance.

below the roof, or dome, cut out of the lower wall and one-third of each side-wall, of the full size of the bore of the tube, and by which fluids may be freely evacuated or injected; the distal end of this segment is sloped off towards the dome, so that no obstruction can lie there, while at the proximal boundary a curved lip projects over one-third of the whole fenestra to prevent the possibility of obstruction; and the fenestra thus guarded, and

being, moreover, on the under side, cannot be stopped by the wall of the cavity coming into contact with it, nor by the falling upon it of any natural textures, or layers of false membrane, or flakes of plasma, as often happens with the open end of the old canula. If, while discharging the fluid for which it was introduced, there be found an aggregation of cysts, or a multilocular sac, this instrument may be used as a long artificial finger to examine the interior of the original cavity, and to feel for a proper place to enter, where it may be held till the cutting point is advanced to make an aperture for its introduction.

Thus, in ovariotomy, it will be found extremely convenient, the left hand supporting the tumor and the right holding the instrument, which can be instantly changed, by an easy movement of the same hand, from a trocar to a sound, and *vice versa*, to define and puncture cyst after cyst, until the bulk of the whole is sufficiently reduced to admit of withdrawal through the abdominal incision, with only one aperture in the cyst-wall first punctured, and this always occupied by the instrument which prevents leakage, and the dome trocar may here be used, where the end of the open canula could not be with safety, to stir up and liquefy the loculose contents and to break down such obstructions to the flow as imperfect septa and membranous intersections, while it still plugs the original aperture, thus preventing escape of cystic fluid into the cavity of the abdomen, and it oftentimes obviates the necessity of enlarging the aperture in the cyst for the introduction of the hand, which procedure should be avoided as involving overflow of cyst-fluid upon the peritoneum.

In operating for hydatids of the liver or kidney, the dome trocar, of aspirator size, may be used to loosen and dis sever these little bodies while the aspirator is extracting them through the same instrument. And we may, with one of these smooth-ended instruments, of suitable length, search for and drain off the last drops of urine, during aspirato-puncture of the bladder, which we dare not do with the end of the open canula, much less with the sharp point of the ordinary single-tube aspirator needle; or, while the dome instrument is within the bladder, we may use it to explore the interior both before and after emptying it. In cases of intractably enlarged prostate, I believe that we may properly reach the bladder by perforating this gland with a dome trocar having a less curve than an ordinary sound, and thus not only relieve the bladder at the time, but give permanent release from the oft-recurring retentions. I have forced a common strong catheter through the prostate in such a case; and the patient, who was previously nearly worn to death with his disability, is now enjoying a new prostatic bit of urethra, and is independent of instruments.

The life-giving operation of *transfusion* may, I

think, be quickly and well done with this instrument. A short dome trocar, of suitable size, having been attached to each end of an India-rubber tube a foot long, with the middle expanded into a bulb, one of the trocars is inserted into the vein which is to furnish the blood, and, when the apparatus is filled, the other trocar is introduced into the receiving vein, when the operation is completed. The tubes are closed and opened at their distal ends by retraction and projection of their domes, which prevents the possible admission of air; and no valve or stopcock is needed. The receiving vein should be exposed by a short incision, but the supplying vein will generally be sufficiently prominent to be entered without previous dissection. As soon as the lancet-end of the outer tube is inserted, the dome is projected, and the tubes thus guarded may be safely pushed as far as required, downward into the furnishing vein, and upward into the receiving vein, and no ligature will be needed. Thus time, so valuable in this operation, is saved, disturbance of the vein is avoided, and injury to the interior of the vein need not be feared. If the *mediate* method be preferred, a common glass, or hard India-rubber, or metal, syringe, with the piston removed, and the nozzle inserted into a flexible tube, armed with one trocar, will be a suitable reservoir into which the blood may be caught, as in ordinary venesection; or the blood may be defibrinated by whipping, and strained into the syringe; the dome with the open fenestra is left projected till the trocar fills, then it is retracted, closing the fenestra, and leaving the point of the outer tube ready for puncture. Upon inserting the trocar, we need not replace the piston, for sufficient and more steady propulsion may be obtained by merely raising the syringe. The hole in the side of the nozzle, used by Mr. Wagstaffe, is liable to occlusion from the contiguous wall of the vein; in the dome trocar this is obviated by a curved projection of the tube-wall over the proximal end of the fenestra, open at the sides, as previously described. In this operation it is very important that the dome be solid to prevent lodgment of clot.

The *aspirator attachment* deserves attention, for it can be applied to any syringe or exhausting apparatus; the adjustment is effected instantaneously and without moving either trocar or exhausting apparatus, or twisting the flexible, connecting tube, by merely pushing the end of the aspirator nozzle into the funnel-shaped end of the inner canula, and fixing it by one turn of a loose ring-nut, like a hose-coupling. The India-rubber tube connecting the nozzle with the aspirator has the usual bit of glass-tubing, so that the current may be observed or its absence noticed.

Some peculiarities of the different sized instruments should be mentioned. The *ovarian trocar* has a thumb-nut (for which I have to thank Dr.

Thomas Keith), by which either the cutting point or the dome may be advanced or retracted, and fixed in either position by the thumb of the hand holding the instrument. The proximal end of the inner canula is prolonged into a hollow, curved handle, very convenient to hold by, while it also directs the current of the flowing liquid downwards; and one end of an India-rubber tube, three feet long (with a bit of glass tubing in it), may be drawn over the lower orifice of this hollow handle, to conduct the fluid into a receiving vessel; the middle of this tube is expanded into an elastic bulb, by which the flow through the tube may be promoted until the syphon current is established; and we may use it for washing out or for injecting the cavity. Mr. Wells' grapples may be slipped upon this trocar, or long, light clamp-forceps, with ring-ends, may be used to seize the sac, upon or even before puncturing, and, held in the hand with the trocar, will accommodate themselves to the varying distances to which the trocar enters.

The *trocar for paracentesis abdominis* has a curved, hollow handle continuous with the inner tube like the ovarian trocar. All the sizes below that for paracentesis abdominis, have their proximal ends adapted to the aspirator nozzle, and therefore a separate, curved, hollow handle is provided to fit all of them, and may be instantly fixed to either by a ring-nut, similar to that of the aspirator nozzle; and with this handle an India-rubber tube and bulb may be used, as with the ovarian trocar, when we wish to simply empty a cavity without the aspirator. The instruments may be of any size. Of those which I have had made, the *ovarian trocar* is ten inches long, including the handle which is four inches, with the internal diameter of the inner tube half an inch. Dr. Washington L. Atlee tells me that he has used one of these in his last forty-one ovariectomies, and expresses unqualified approval of it.

The *abdominal trocar* is six inches long, including two inches for the handle, the calibre equalling that of a No. 11 catheter of the American scale, 17 of the French. The *smallest sizes* correspond with Dieulafoy's aspirator needles; of these, two are each seven inches long, and fine, for the bladder and deep tapping; two are four inches in length, and stouter, for hydrothorax, transfusion, etc.; one is short and very fine, for hydro-pericardium, spina bifida, etc.

The same principle has also been applied in the construction of a dome trocar catheter, by Dr. Fitch, for tunneling the enlarged prostate, for supra-pubic or rectal puncture of the bladder, and for tapping ovarian cysts per vaginam. This instrument is virtually a catheter within a perforating tube. The main object intended is to make a direct channel through the enlarged prostate, instead of nibbling off fragments of the gland through the floor of the urethra, as is attempted by several

recent contrivances. It will likewise be found most efficient for puncture of the bladder from the rectum, for discharging noxious intra-peritoneal effusions, for antiseptic washing of the peritoneal cavity through the retro-uterine cul-de-sac, and for evacuating and injecting ovarian cysts *per vaginam*; and it will be of immense value in supra-pubic lithotomy by opening the bladder from within, outwardly.

JENSEN'S CRYSTAL PEPSIN.

The following extracts are from an article by Hugo Engel, A.M., M.D., in a recent number of the *Medical Times*, Phila.

Of the many new preparations which have recently appeared in the market, there are comparatively so few possessing real value that when we meet with such of the latter class we should not withhold just praise and make their merits known to the profession.

Mrs. M. had been nursing her youngest child, a boy, until he was seven weeks old, when her right breast inflamed. Her physician forbade her nursing the infant with the sound breast, in consequence of which the secretion of milk soon ceased totally,—a result which proved injurious alike to mother and child. The child, after being weaned, emaciated rapidly, so much so that when it came, some two weeks later, under my charge, it already suffered from that condition called marasmus. I regulated the feeding of the infant with diluted cow's milk, to which some sugar and a grain of salt were added. The nursing-bottle was kept scrupulously clean, the temperature of the milk uniform, and the feeding done regularly every two hours. After four days the discharges from the bowels still continuing unhealthy and the child losing flesh and declining in general health, pepsinum saccharatum in the dose of five grains was added to the milk. For the next day or two the child seemed better; but when it relapsed into its former condition, first the same dose of Schef-fer's and then of Boudault's pepsin, to either of which diluted hydrochloric acid was added, were substituted for the saccharated pepsin, with, however, the same want of success. I then ordered, for the first time in my practice, Jensen's pepsin, gr. ii, with one minim of diluted muriatic acid, to be administered four times daily when the child was fed. Immediately, almost, an improvement began, and the boy grew strong and plump during the following seven or eight weeks. The parents now moved to another part of the city, and as it seemed very inconvenient to have the medicine put up by the apothecary in their former neighborhood, they asked him for a copy of the prescription, and brought it to a drug-shop not far from their new residence. It had taken the medicine prepared at the new place for about five or six days,

when again it was brought to me with every sign of relapsing into its former marasmic condition. I advised the mother to procure the solution once more from their former apothecary. This was done, and again improvement began almost immediately. Some three weeks later, a part of the medicine having been spilled, and the latter suddenly giving out, the parents were again induced to buy the pepsin in the neighborhood, when it became apparent to even the most superficial observer that the benefit the child had derived was due to Jensen's pepsin: again the boy's health declined, and he lost flesh; and when the now frightened and thoroughly convinced mother again substituted the old preparation, she once more had the pleasure of seeing her infant thrive.* No further disturbance in the health of the latter took place; the baby looked the picture of health, and when with the appearance of a sufficient number of teeth the child was able to digest a more solid food, the dose of the medicine was gradually reduced in size, until at last the boy continued to do well without the assistance of artificial gastric juice.

Mrs. R. requested me to attend her sixteen-months-old child, suffering from cholera infantum. After I had succeeded, by baths, by the utmost attention to cleanliness, and by insisting upon the little patient being carried about in the fresh air during the cooler hours of the hot summer days (it being July), and by permitting it to make frequent trips in the ferry-boats and steamers proceeding up and down the Delaware, and by appropriate medicine, in putting a stop to the vomiting and the frequent morbid discharges, I administered pepsin in conjunction with dilute muriatic acid to improve the digestion. But the result was by no means satisfactory until I prescribed Jensen's pepsin, when within a few days a decided improvement was noticed; and, as this continued steadily, I discharged the child as well. About a week later it was again brought to me, on account of a relapse. I then elicited the following. As long as the mother had to come with the child to my office, she had the medicine put up by an apothecary to whom I had sent her; but when the visits to me were discontinued, she considered it too great a distance to send for the medicine, and so she procured it from an apothecary in her neighborhood,—with what effect has been mentioned. I told her what I thought, that perhaps the medicine did not contain the genuine preparation I had ordered, gave her a new prescription, and advised her to have it put up by the former apothecary. She did so, and the immediate improvement of the baby was too apparent not to ascribe it to the medicine.

Besides these two cases, I will mention, with as

few words as possible, two more. One was that of a lady *enccinte*: she was suffering a good deal from nausea and vomiting. Other remedies having been tried, but without success, I prescribed pepsin,—at first, however, with no result at all. I then changed it to Jensen's pepsin, and after the third or fourth dose the disagreeable symptoms had ceased almost. When I discharged her she asked me if she could have the medicine prepared by a relative of hers, as she would get it much cheaper. I consented, but cautioned her to let me know immediately when her former symptoms should return. Her relative evidently substituted a different preparation of pepsin, as the lady, after having taken his medicine for a day or two, returned to me with the information that the nausea had again reappeared, though not as yet the vomiting. At my advice, she procured the pepsin from the former apothecary again. The result was as expected: the nausea ceased again.

The last case which I pick out from a large number was that of a girl, *æt.* 16, suffering from chlorosis. No matter which preparation of iron I tried, her stomach would rebel: either vomiting or severe nausea would set in, or she would feel a heavy pressure in the epigastric region. I then prescribed Jensen's pepsin with dilute hydrochloric acid to be taken at the commencement of each meal, and the iron about half an hour after the latter. From this time on she was able to take the iron. She also (this being the reason I mention her case) procured the medicine with the pepsin once from an unreliable apothecary, and with the same result as attended the other cases reported: the symptoms of indigestion returned, to disappear again on the resumption of the genuine preparation. I had frequently tried every imaginable combination to prevent the disturbance of the stomach happening in some persons whenever they have to take opium or any of its preparations. I could report a long series of cases in which the annoying symptoms ceased on combining Jensen's pepsin with the opiate; but those mentioned above will be sufficient to prove from actual experience that we possess in this remedy a preparation of pepsin superior in every respect to all others of its kind in the market.

The following will be of interest regarding pepsin preparations in general and Jensen's in particular. Pepsin itself is a ferment. There has as yet been no method detected by which it would be possible to obtain pure pepsin. Every process by which pepsin is manufactured, no matter if by simple digestion and evaporation (primitive, Lamatsch's), or by precipitation with acetate of lead (French, Boudault's), or by precipitation with a concentrated solution of chloride of sodium (American, Scheffer's), results in the obtaining of only a very small percentage of pepsin, and this of very limited strength. It was thought that especially

* The apothecary in their new neighborhood confessed, later, the substitution by him of Scheffer's pepsin for Jensen's.

by the latter method pure pepsin would be precipitated; but such is not the case. The French pepsin is expected to dissolve twelve times its weight of albumen, Scheffer's and the German, about fifty times. A plain arithmetical example gives us the following figures. One ounce of beef contains four hundred and eighty grains: according to the French Codex, forty grains of pepsin, and according to our Pharmacopœia, ten grains, would be necessary to digest this quantity of beef. But, as a healthy person, besides other albuminous aliments, will eat for a meal a quarter of a pound of beefsteak at least, one hundred and sixty grains of the former and forty grains of the latter preparation would be needed for its digestion. How does this coincide with our usual dose of Boudault's or Scheffer's pepsin,—ten grains?

Jensen's crystal pepsin, which has received the name of crystal (not crystallized, as it is often erroneously called) simply from its peculiar glistening, crystal-like appearance, is (without the addition of an acid) perfectly soluble in water, and not precipitated by common salt, therefore a peptone with very great pepsin-effect; "it has proven itself to be the most powerful preparation of pepsin the market offers, one which is capable of dissolving over five hundred times its weight of hard-boiled albumen." Of its manufacture which seems to be thoroughly known only by Jensen, we can presume that it is prepared by maceration of the stomach and its mucous membrane in acidulated water at a temperature of 38° to 40°; the albuminoids are changed into peptones (causing in this way the production and gain of all latent pepsin), and by a peculiar process the syrup-like mass resulting is dried on glass, when the "pepsin" appears in the shape of transparent scales. So carefully is the whole process conducted, and so utterly at variance with all previous methods, that the property belonging to all other preparations of pepsin, of containing chlorides, is totally wanting in Jensen's. If to a solution of any other pepsin nitrate of silver be added, chloride of silver will immediately appear as a thick white deposit, while the same test applied to Jensen's pepsin will either be without any result or (due to a trace of muriatic acid) a faint white cloud will show itself. When we reflect upon the large quantity of pepsin Jensen is able to get from a macerated stomach, the absence of chlorine in his preparation, and certain well-known physiological effects of muriatic acid on digestion, the following theory does not seem to be so very absurd to the writer of these lines.

In consequence of the great popularity Jensen's pepsin naturally enjoys on account of its reliable and powerful effect and its uniform strength, many imitations have been placed on the market, and are dispensed as Jensen's pepsin. The fact just mentioned (the absence of chlorine), its perfectly dry, crystal-like appearance, and its total solubility

in water without the addition of an acid, will serve to distinguish the genuine Jensen's pepsin from all imitations. It has been thoroughly tested by Dr. Tscheppe, of New York, Dr. Wolf, of Philadelphia, and many other competent and impartial chemists, and found to possess the power of dissolving more than five hundred times its weight of hard-boiled albumen. It is therefore ten times stronger than any other preparation. This fact has an important bearing not only on the size of the dose, but also on its cost: the ounce of this pepsin being sold for one dollar and seventy cents, a dose of ten grains would cost only three cents, and, as one grain of it is equivalent to ten grains of the American pepsin, its great cheapness becomes at once apparent. When testing any preparation of pepsin for its strength, the albumen should be finely subdivided, the solution acidulated with 0.5 per cent. of the pure concentrated hydrochloric acid, and the whole kept at a temperature of about 103°, which experience has proved to be the most favorable for the effect of this ferment.

Pepsin alone has very little influence on digestion: its effect increases with the quantity of acid added. Double the dose of pepsin alone will not visibly accelerate the digestion induced by a single dose; but doubling the quantity of the acid (certainly within the physiological limits) will cause the digestion to be finished in less than half the time. As a rule, the most favorable effect of Jensen's pepsin can be obtained when to each grain of the latter about one minim of the diluted hydrochloric acid is added, but with the proviso that on account of its being a ferment the pepsin is to be first dissolved in water, and to it in its diluted state the dose indicated of the acid is added, as follows:

R—Pepsin. crystal. Jensen, gr. lxxii;
Aquæ floris aurant.,
Glycerin.,
Syrup. limonis, aa fʒi;

Cui adde:

Acidi hydrochlor. dilut., fʒiss.—M.

S.—Dose: one teaspoonful in four ounces of water to be taken at meals.

No alkali should ever be administered at the same time or in combination with any preparation of pepsin, the slightest addition of such making the latter inert. Of all the acids, muriatic acid is the most favorable in its effect; then come, in the order named, phosphoric, nitric, and sulphuric acids; the vegetable acids having no appreciable effect.

WHAT CONSTITUTES A QUACK.—This question, it is expected, will shortly be answered in a court of law. *The Medical Age*, in commenting on the above, says:—"A member of a firm of peripatetic advertising physicians, of large promises, in the

Dominion, has brought an action, fixing damages at \$10,000, against two prominent physicians who have called him a quack. The Canada Medical Act requires that a physician shall not only be a graduate of a medical college in good standing, but that he shall also pass an examination before the licensing body, who shall be independent of the teaching bodies. This law secures practitioners possessing a much higher average of education than obtains among the physicians in countries not having this salutary law, and the fact of a man's being allowed to practice in Canada is guarantee that he is not what Webster defines as a quack, viz., "a boastful pretender to medical skill; an empiric; an ignorant practitioner." This is the meaning of the word "quack" among the laity, but in the profession a man may have all knowledge of medicine and yet be a quack; and his knowledge may be of very mediocre order, and yet his standing may be good. The outcome of the suit mentioned will be awaited with interest. Will the court decide that "quack" means what the laity hold it to mean, or will it allow the profession to define its meaning? In the former case the verdict must be in favor of the plaintiff; in the latter for the defendants, who unquestionably intended the term to apply not so much to the skill of the plaintiff as to his methods of doing business, his advertising, unwarranted promises of curing, exaggeration of minor ailments for sinister purposes, ostentatious parade of qualifications, depreciation of the ability of brother practitioners, and the various other unethical and immoral devices of the itinerant physician."

ADMINISTRATION OF SANTONIN.—Dr. L. Lewin recommends, in the *Berl. klin. Wochenschrift*, the following forms of administering santonin:

1. R.—Santonini 0.2 gm. = 3 grs.
 Ol. cocos nuciferæ.....60.0 " 2 fl. oz.
 Dose: a tablespoonful two or three times daily.

2. R.—Santonini 0.2 gm. = 3 grs.
 Ol. amygdalæ expressi. .60.0 " 2 fl. oz.
 Ol. cinæ (Levant worm-seed)..... gtt. 4 gtt. 4.
 Dose: a tablespoonful two or three times daily.

3. R.—Santonini 0.2 gm. = 3 grs.
 Ol. ricini20.0 " ¾ fl. oz.
 Ol. cinæ..... gtt. 4 gtt. 4.
 Dose: a teaspoonful two or three times daily.

4. R.—Santonini 0.2 gm. = 3 grs.
 Ol. ricini20.0 " ¾ fl. oz.
 Ol. cinæ..... gtt. 4 gtt. 4.
 Sacchari..... q. s. q. s.

Make into a soft paste with sugar. To be given in doses, during 48 hours.

5. R.—Santonini 0.05 gm. = ¾ gr.
 Ol. ricini 5.0 " 75 grs.
 Ol. cinæ..... gtt. 1 gtt. 1.

Fill into four capsules.

Dose: one capsule two or three times a day.

Lewin finds fault with all the usual methods of administering santonin. According to him, it should be given in its least soluble form, *i. e.*, in that form in which it will be the least readily absorbed, as the effect desired is not a general, but a local one. An oily solution of santonin undergoes, according to his experiments performed on animals, not the slightest absorption in the stomach, so that under no circumstances is any trace found in the urine. Almost any kind of oil may be employed—cocoa-nut oil, olive oil, cod-liver oil, or castor oil. He recommends that three grains of santonin be mixed with two ounces of oil, and given in four doses. He thinks that a useful addition to the above would be that of an oil contained in santonica, the oleum cinæ æthereum, for the reason that all ethereal oils have been shown to act as poisons on the lower forms of animal life.

TREATMENT OF CHOREA.—In the course of a clinical lecture on chorea, Professor H. Nothnagel remarked that when the disease followed articular rheumatism, salicylate of soda was given; but this treatment had to be pursued empirically and carefully, as nothing was yet known of the nature of the disease. (*The Medical Press.*) Opiates had no effect, neither had calabar bean. Now-a-days potassic bromide was almost always given, but without any good result. As calmatives, and for the purpose of procuring sleep, morphia and chloral might be given. He had convinced himself by numerous experiments that propylamine was useless. Arsenic, in the form of Fowler's solution, was still the most effective remedy. It could be given by itself or in water. He suggested the following:

R. Liq. Fowleri, grm. v;
 Aq. destill., grm. xv. M.

Five drops to be given in a tumbler of water immediately after meals, and the dose to be increased by three drops every day until it reached thirty drops, after which it was to be slowly diminished. The constant current was another effective remedy in chorea, combined with tepid bathing or the application of ice-bags to the spine.—*Lou. Med. News.*

THE THIRD ELEMENT OF THE BLOOD.—Hayem has repeated his convictions on the subject of the newest phases of the histology of the blood before the Acadèmes des Sciences. As it will tend to make clear some of the confusion which has grown around the question, we give in a few words Hayem's conclusions. We do this the more especially because our readers may compare them with the papers by Norris, lately published in our columns. The hematoblast of Hayem is regarded as the precursor of the red-blood disc and as the agent concerned in the coagulation of the blood.

The "blood plate" or "plaquette," described by Bizzozero, is considered by the French observer to be identical with the hematoblast. It will be remembered that Norris has postulated the identity of his invisible corpuscle with Bizzozero's "plaquette." By Hayem the invisible corpuscle is still looked upon as a red disc from which the hemoglobin has passed away. Each observer claims for his element an important rôle in the development and coagulation of the blood. Schmidt, of Dorpat, has assigned the chief agency in the process of coagulation of the blood to the leucocytes or white-blood corpuscles.—*Lancet*.

INHALATION OF IODOFORM IN PHTHISIS.—The general practitioner will be glad to make the acquaintance of any device to afford relief to consumptive cases. We have seen some very intelligent patients who persistently maintained that they obtained marked relief from the inhalation of the peroxide of hydrogen. De Renzi and Rummo (*Gazz. Medica Ital.*) claim good results in phthisis and other diseases of the respiratory organs from inhalations of iodoform dissolved in turpentine. The patients were made to inhale twice a day, for two hours, in a small room, the spray of iodoform and turpentine. The effects were more satisfactory than with any other mode of treatment. There was always prompt and considerable diminution of cough and expectoration; in bronchiectasis the fetid expectoration was completely deodorized. Physical signs diminish, the temperature falls, pulse and respiration are less frequent. The secretion of urea is lessened in proportion to the fall of temperature. Iodoform given by inhalation is much more prompt in action than when taken by the stomach; it is an anæsthetic to the pulmonary vagus, and has an alterative and drying local action, which is aided by turpentine. Its antiseptic action must also be taken into account.—*Med. Review*.

PROLONGED GESTATION.—Dr. E. M. Reid relates the case of a patient who bore a child after a gestation lasting two hundred and ninety-five days, at least. *Circumstances were such that the parents were separated during that period previous to the birth of the child.* Dr. Reid is of the opinion that the prolongation of the gestation was produced by the fact that in its course the patient had several copious hemorrhages, viz., on the 177th, 183rd, 189th, and on the 213th day another very profuse hemorrhage took place.—*Brit. Med. Jour.*

[The italics in the above are ours. Dr. Daniel Drake, when Professor of Theory and Practice in the University of Louisville, used to tell the students of a striking example of the power of habit. A woman of his acquaintance in Ohio had for a long time borne a child to her husband every year. She continued this habit for two years after her

husband's death. This might be called an instance of parturient cachexia].—*Louisville Med. News*.

THE PROFESSION'S GREATEST NEED.—In the *N. Y. Medical Record* (July 21) is the following:—"If we were to ask the average practitioner in city or country what was the greatest single obstacle to his progress, he would doubtless say, a field too much occupied. It is the constant appearance of new men, young, eager, and hopeful, which cuts off here and there the extension of his practice, and which threatens to narrow down that which he already possesses. Protection against a horde of superfluous rivals is what the general practitioner, who is himself well equipped and competent, most needs. How can he secure this protection? There is but one way which is at all practicable, and that is by elevating the barriers, so-called, which now mark the entrance to the medical profession." A four years' course and an Examining Board is urged for.

FOR AMENORRHOEA.—Dr. H. C. Wood says the following formula, known as *Dewees' Emmenagogue Mixture*, he relies upon almost exclusively in the treatment of simple atonic amenorrhœa. The amount of iron should be as the anæmia, aloes as the state of the bowels, and cantharides as the susceptibility of the urinary organs.

R Tincturæ ferri chloridi f ʒij
Tincturæ cantharidis f ʒj
Tincturæ aloes f ʒj
Tincturæ guaiaci ammoniatæ f ʒiiss
Syrupi q. s. ad. f ʒvj

S. Tablespoonful three times a day. *Columbus Med. Journal*.

TO CLEAN CATHETERS.—A correspondent of the *Lancet* suggests the following method of cleaning catheters: Take a cork of a more conical form than those commonly used, with a hole made through it longitudinally; pass the catheter through the hole, and fix the cork into the tap of an ordinary water-pipe (hot water one preferable), and turn on the water. By so doing the force of the water is greatly increased, and the catheter properly cleaned.

GRINDELIA ROBUSTA FOR ASTHMA.—Dr. Bombelon recommends the smoking of cigarettes, the tobacco of which has been saturated with the resin of grindelia robusta, to asthma patients, whether they are smokers or not. The tobacco must also be well impregnated with saltpetre, which will facilitate its combustion and the development of smoke. If the patient is unable to smoke, the fumes are blown towards towards him.—*The Med. Record*.

THE CANADA LANCET.

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TREATMENT OF DIPHTHERIA.

In no disease is the range of treatment wider or more varied than in diphtheria. This condition always obtains under a state of uncertainty as to the desired ends, and the best means of reaching them. There could be no better proof of such uncertainty as regards diphtheria, than the numerous remedies, often of an opposite nature, proposed, both for local and internal use. Much of this confusion takes its origin in mistaken ideas as to the real nature of the disease. There are still those who believe that in certain cases at least, diphtheria may be purely local in its operations. The recently published results of an inquiry instituted in Michigan, show that this opinion still prevails to some extent. The prominent part which the local affection plays, and the distress to which it often gives rise, have also greatly tended to draw attention from the systemic nature of the disease, and unduly magnify the local lesions. The consequence is that we have an elaborate, though an ill-defined system of local treatment, involving much trouble and danger to the attendants, and much annoyance, and even great distress, to the patients, especially young children, who are usually frightened beyond measure at the sight of the brush or swab, and summon forth all the physical power remaining to them to thwart the designs of their tormentors. The flow of blood which so often follows this operation, and the accompanying struggles, afford evidence sufficient to condemn the practice. Such treatment is as

irrational as it is barbarous, and nothing but evil is to be expected from it.

The accepted theory of the day is, that the symptoms and lesions which we call diphtheria are always due to the operations of a subtle poison circulating in the blood, the real nature of which is unknown; in these respects resembling the poison of small-pox, and the infectious exanthemata in general. In all these diseases it would appear that the poison has a propensity for working its way from the centre to the periphery—from the blood-ream to the oxygen-bathed exterior. The diphtheritic poison chooses by preference the respiratory tract, changing the mucous membrane into necrosed tissue. It also in a special manner affects the heart-force, and tends to death from cardiac exhaustion. The microscope reveals blood deterioration, and the test tube exhibits albumen. In view of these facts, the pulse and the blood should have our first care. A mild purgative should usually begin all treatment, and should be repeated from time to time if constipation be present, or no tendency to diarrhoea exist. Very often at the onset the pulse is strong and full, and the temperature high. In such a case nothing could possibly be more desirable than pilocarpine, or in its absence, the fluid extract of jaborandi. In the earlier stage of the malady, and while the local disease is yet in the formative stage of the so-called membrane, with its deeper vessels in a condition of intense hyperæmia, the diaphoresis, and especially the ptyalism, which follow the administration of this remedy, can scarcely fail to exercise a beneficial influence. But as this is a powerful heart depressor, it must be given only in suitable cases. Under no consideration should it be given in weakened pulse and failing heart force. We are without proof as to the power of tincture of iron over the blood corpuscles in this disease, but theory would seem to demand its administration. In all exhausting diseases rapid in their progress, quinine is called for, and in none more so than in diphtheria. It should be given as soon as the pulse begins to fail, if not before, and the dose should be proportionate to the exhaustion. As a cardiac stimulant, belladonna holds a high place, and should be combined with the quinine in cases of failing heart action. Alcohol should be given freely as soon as the vital forces show signs of wavering. The quantity usually given is too

small to do any good. In a severe case, it is almost impossible to induce the toxic effects of alcohol. Therefore when it is called for in this disease it should be given more freely than is the rule in other diseases.

The local treatment should never be of an irritating kind. All gargles, washes, and solutions for steaming or atomization, should be of a soothing and agreeable nature, more especially in the case of children. For very young children, the application intended for the throat should be of a nature suitable for internal use, as for example sulphurous acid and glycerine, tincture of iron and chlorate of potash. Independently altogether of any supposed specific action on the diseased surfaces, disinfecting applications must always hold a prominent place, both for the good of the patient and the protection of the attendants, and should be frequently repeated. Soothing and emollient applications to the buccal surfaces, gums and tongue are very grateful. Great care should be exercised in touching raw and painful parts. But as the whole respiratory tract is not to be reached in this way, it is absolutely necessary to resort to inhalation, or atomization, or both. It is claimed by good authority that the local manifestations are checked, and sometimes terminated, by the following: Slake a piece of lime with a weak solution of belladonna; when this process is completed the surplus fluid is decanted, and a quantity of oil of turpentine is incorporated with the slaked lime. The fluid previously drawn off is now added by trituration, after which the whole is strained or filtered. The result is terebinthinated lime water containing belladonna. This may be used at short intervals, or continuously, almost, in severe cases, by two methods, steaming and atomization, steaming being the most efficacious. This is accomplished by placing some kind of frame over the head of the bed and covering it with a blanket, a vessel containing the fluid being kept hot by hot pieces of iron or brick.

The skin should not be overlooked, as it is a great eliminator of systemic poison. It should be sponged with a weak solution of soda several times in the twenty-four hours, and rubbed thoroughly with a coarse towel. The kidneys are also important depurators, and should receive some assistance in the discharge of their function, although it is more the custom to ignore them entirely in

the treatment of diphtheria. But the most important part of the treatment of diphtheria is the diet. Suitable diet is important in all cases of disease, but more especially is this true where blood deterioration and general exhaustion are pre-eminent features. The diet should be of the most digestible and concentrated kind, and should be given as often, and in such quantities, as the stomach will bear. It is important to remember that digestion may be disturbed by injudicious medication. Food is more important than medicine of doubtful benefit. In addition to the more common articles of food, we might mention beef peptonoids. Suspended in broth, they are easily taken, and are very digestible and nutritious.

From amidst much that is heterogenous and bewildering, we have thus endeavored to outline a plan of treatment which we feel convinced is supported by reason, science, and the best experience of our day, and with modifications adapted to each case, will afford the best promise of a favorable issue.

MEDICAL COLLEGE OPENINGS.

The opening of the various medical schools in Canada for the present winter session is an event of considerable interest, not only to teachers and students, but also to the profession and the public. In point of numbers, the attendance at the various schools, the present session bids fair to outnumber that of any previous year in the history of Canada. Abernethy might well say, if he were in the flesh to-day, "God bless you, gentlemen, what is to become of you all?"

The introductory lecture in the Toronto School of Medicine was delivered by Dr. Richardson. After welcoming the students to the school, he alluded to the difficulties attending the study and practice of medicine when he first entered the profession more than forty years ago. He spoke of the progress made by the schools in the city, and expressed regret that a medical staff had not been connected with Toronto University. He maintained that a physiological laboratory should be established in University College, and an eminent professor appointed to teach this important branch of science. He then referred to the great progress in medicine, surgery, and hygiene in his time. The most important doctrines of hygiene

had been developed since the year 1854. It was after the Crimean war that the attention of the government was more especially drawn to the subject, and the result had been shown by the decided amelioration which had taken place in the British troops. The subject he wished to present to them was, whether as members of the medical profession they had any reason to believe that they could find in Nature remedies suited to the diseases they were about to treat; and whether what they found and used successfully in a great many cases were really intended for the purposes for which they were used? In this connection he took up the question of evolution. It was interpreted in different ways by different persons; it did not always mean the same thing. He then proceeded to discuss the position of the ultra school of evolutionists, whose views he declined to accept. He believed that all those things which they could utilize in their profession were pre-ordained, and if this principle were accepted, it followed that they would be able to find as they investigated the matter closely that there was something capable of relieving nature and changing the action of the different parts of the system under their control. In concluding he offered a few words of friendly advice to the students, and asked them to conduct themselves as men and christians. He thought medical students were more sinned against than sinning, and especially asked them not to prosecute their admirable talents for singing which were prone to irritate the feelings of delicate policemen. They were very susceptible, and it must be recollected that they were the guardians of the law. He trusted that the students would prosecute their studies diligently and become a credit to the school.

The opening lecture in Trinity Medical College was delivered by Prof. Sheard, and was a most able and eloquent discourse. After welcoming the students to the college, he said they had no doubt considered well the path they had taken, its difficulties, as well as its attractions, its responsibilities as well as its rewards, its opportunities for good, and its possibilities of evil. He was aware of the tendency of the present time to lead the more promising youth into commercial life. Many were wont to believe that commerce was the golden girdle of the world, binding nations together by common interests and common aims,

but science bound men and nations together by a girdle, the links of which were far stronger, more durable, and more precious than were those of the golden girdle of commerce. Discoveries in the application of other practical sciences were often stayed from their widest spread for the pecuniary gain of the discoverer, but the discoveries in scientific and practical medicine were free to all the world. All medical discoveries were common property, and the richest reward the discoverer could have was the consciousness that lives had been saved, sufferings alleviated, or disease prevented. He then went on to speak of the importance of the study of biology, anatomy, histology, and physiology. Scientific principles were to the physician and surgeon what the compass and sextant are to the navigator. He did not want to separate the science from the art of medicine, for with Prof. Huxley he would say, science and art were the obverse and reverse of nature's medal. But in the qualifications of a trusted medical adviser there was wanting more than fine science, though that must necessarily be the basis. He should have tact, judgment, firmness in opinion, courtesy and gentleness in expression. He did not wish to deter anyone from the laudable pursuit of studying for the medical profession, for a physician's calling was one of the most honourable, ennobling, humanizing, and useful in the world; but he would be partial if he did not warn them to prepare for its criticisms as well as its trials. He then gave a few humorous instances of the criticisms to which a doctor is subjected, and stated that the absolutely gratuitous assistance given by the medical profession to those unable to pay for it far exceeded that which was bestowed or demanded in any other line of life, and it was not less creditable because custom had in a great measure caused it to be expected as a matter of course. If any were adopting medicine because it was an easy life, he advised them either to dispel that illusion or to return home, for without earnest, diligent, and careful application they need hope for nothing. On the other hand, those who were resolute and determined would find in medicine as promising a field as in any other. He claimed that their profession, in the pursuit and use of truth, offered the most complete and constant union of those three qualities which had the greatest charm for pure and active minds, novelty,

utility and charity. Summing up in one sentence what he had been enforcing, he said the secret of all noble life was in belief, and the characteristic of all noble minds in the vigor with which they believed that which was true. Prize strength, love the beautiful, practice self denial, and be patient. Let them resolve to elevate themselves to the promotion of the whole science, art, and charity of medicine. Let that resolve be to them as a vow of brotherhood, and may God help them in their work.

The opening of McGill Medical College this session was inaugurated by an introductory lecture by Dr. Joseph Workman, of Toronto, one of the oldest graduates of the institution. His lecture, which is published in full in the *Canada Medical and Surgical Journal*, was in his usual happy vein. It will also be of value in connection with the early history of the school. In the first part of his address he alluded in fitting terms to the founders of the school. The students of the present day next came in for a share of his attention, in which he cautioned them, while in pursuit of the practical, not to forget or overlook their scientific and classical studies. "Show me," said he, "a man who is fond of botany, zoology, or geology, and I will feel assured he will never be an idler." He also referred to the rich literary treasures to be found in a study of the Romance languages. He then alluded to the munificent donations and bequests which have been given by the wealthy people of Montreal to their Universities, and deplored the fact that ours in Toronto have fallen heir to nothing from the dead and very little from the living. In conclusion, he referred in fitting terms to the memory of departed friends and fellow-students of McGill College, some of whom had left behind them noble records of good deeds.

The Montreal School of Medicine, emerging from the trials of the past summer, opened with more than usual joy and eclat. The president, Dr. D'Orsennens, gave the introductory lecture, in which he alluded in stirring terms to the difficulties through which the school had so successfully passed, and paid a glowing and enthusiastic tribute of respect and thankfulness to the Sovereign Pontiff, who so kindly listened to their cry of distress, and replied in a manner so prompt and paternal. Moreover, the sending from Rome of an apostolic delegate to Canada was, for the school, a sure guar-

antee of a still more perfect re-establishment, and the proof that it will be forever now, even in the eyes of ecclesiastical authority, established on a solid and immovable basis.

In Bishop's College and Laval Medical School no special introductory lectures were given this year, but the classes re-assembled as usual on the opening day. In the Western University Medical School, London, the session was opened by an able and instructive lecture by Dr. Bucke, of the London Asylum. The lecturer alluded in hopeful terms of the prospects of this comparatively new school. From the Kingston Medical School the only report we have is of the opening of the Women's Medical College, the introductory of which was delivered by Dr. Lavell. This school has been established on a good financial basis, and the attendance of students is encouraging to the faculty. The Toronto Women's Medical College was opened by an introductory lecture by Dr. Barrett, the President, in the presence of the Mayor and a large gathering of ladies and gentlemen. Speeches were also delivered by the Mayor, Mr. Beaty, M.P., and Principal Caven. The attendance is small, but great hope is expressed in the future of the school. We have had no report from the Halifax Medical School, which opened as usual on the first of October, with a fair quota of students.

The attendance of students at the various schools is much above the average this year. In Toronto alone, there are nearly 400 students in the two schools, 235 being the number registered in Trinity Medical School.

JAMES A. SEWELL, M.D., EDIN.

It again becomes our painful duty to announce the death of one of Canada's oldest and most respected physicians, Dr. James A. Sewell, of Quebec, who died on the 2nd ult., at the advanced age of 73 years. He was a son of Chief Justice Sewell, and was born in Quebec, in 1810, where he received his early education. After receiving his professional education in Edinburgh, where he graduated in 1833, he settled in his native city, and has been engaged in the practice of his profession for upwards of half a century. He was also actively engaged in medical teaching in connection with Laval Medical School, of which he was

Dean and Prof. of Practice of Medicine. For upwards of 40 years he has been one of the attending physicians of Hotel Dieu, and also for many years Chairman of the Marine Hospital Commission. As one of the Governors of the College of Physicians and Surgeons of Quebec, he took an active interest in its affairs, and also in promoting the welfare of the profession. As President of the Quebec Medical Society, he was Chairman of the meeting called to organize the Canada Medical Association in 1867, and in 1871 he was elected President of the Association. During the troubles of 1837-8 he was attached to the Royal Volunteer Artillery. In his younger days he contributed many articles to the *Canada Medical Journal* and *British American Journal*. In his death the people of Quebec and the profession in Canada have lost an old friend, a useful man, and a physician of the highest skill and attainments. His kindness of heart, amiability and gentleness of disposition endeared him to all classes, and he will be greatly missed in the community where he was so well known and beloved. He has left behind him a beautiful and touching memory which will long endure.

Dr. Sewell leaves behind him a large family. Two of his sons have followed in their father's footsteps, both being graduates in medicine of Edinburgh. One is in practice in England, and the other, Colin C., in Quebec. The members of the family have our most heartfelt sympathy and condolence.

QUEBEC MEDICAL BOARD.—The semi-annual meeting of the above-named medical board was held in Quebec, on the 26th of Sept. Present, Dr. Lemieux, President; Hon. Dr. Ross, Vice-President; Drs. Belleau and Campbell, Secretaries; Dr. Lachapelle, Treasurer; Dr. Larue, Registrar; Hon. Dr. Robitaille, (Lt.-Governor); Drs. Lanctot, Duchesneau, Kennedy, Hart, Guay, Marsden, Gingras, Howard, Leprohon, Rodger, Ross, Mignault, Grandbois, Marmette, Lafontaine, Ladouceur, Parke, De St. George, Russell and Rousseau.

After routine a resolution of condolence was passed respecting the death of Dr. Laberge, M.P.P., a former Governor.

A committee consisting of Drs. Campbell, Du-

chesneau, Lanctôt, and Trudel was appointed to enquire into the complaints regarding the large number of rejections at the preliminary examinations.

The following gentlemen were appointed to conduct the examination of candidates for the license: Dr. Howard, Medicine; Dr. Ross, Surgery; Dr. Rodger, Midwifery; Dr. Kennedy, Anatomy; Dr. Parke, Physiology; Dr. Rousseau, Materia Medica; Dr. Guay, Chemistry; Dr. Mignault, Jurisprudence; Dr. Lanctôt, Botany and Hygiene. Four candidates presented themselves, one of which only, was successful, viz., Dr. A. D. McMillan. The committee on credentials examined the diplomas of the following gentlemen, and finding the same to be correct, granted them the license: Drs. N. Morency, E. Perron, C. Tessier, E. Sylvain, G. W. Lachaisne-Jolicœur, W. G. Thompson, H. Archambault, J. F. Peladeau, J. F. Prudhomme, A. J. Hopkins, A. Gauthier, L. A. Moll, J. Stewart, E. Bastien, G. F. Prevost.

The preliminary examination of the College was held in Quebec, from the 20th to the 22nd of September. There were forty-seven candidates, of which only nineteen were successful.

INFRINGEMENT OF TRADE-MARK.—By a decree of the supreme court of Rhode Island, issued in July, 1881, the manufacturers of "Hughes Acid Phosphate" were enjoined from offering for sale "Acid Phosphate" so-called, which was an imitation of Horsford's Acid Phosphate. Quite recently they have been fined \$600 for violation of the above injunction, and the Rumford Chemical Works Co. warn all persons from selling any imitation of their preparation, as they will by so doing render themselves liable to an action for damages.

FELLOWSHIP DIPLOMAS, TRINITY COLLEGE.—Students and graduates of Trinity Medical College will be pleased to learn that the Fellowship Diplomas of the School have been recognized by the Royal College of Surgeons, Edin. The holders of these diplomas will thus be entitled to the same privileges as are accorded to holders of Degrees in Medicine from Colonial Universities. These privileges consist in the exemption of candidates for the license of the College from passing the preliminary examination and also the examination in the primary branches required for this diploma. Other similar institutions in Great Britain will no doubt accord the same privilege.

APPOINTMENTS.—Dr. Fred W. Borden, of Caning, N.S., has been appointed surgeon to the 68th Kings' Co. Infantry, *vice* Dr. Shaw, deceased, and Dr. H. B. Webster, of Kentville, N.S., assistant-surgeon. Dr. Samuel Primrose, of Lawrence-town, N.S., is to have the rank of surgeon-major of the 69th 1st Annapolis Infantry, from Sept. 10th, 1883.

Dr. H. Merrill has been appointed attending physician at the Hotel Dieu, Montreal—G. W. Anglin, M.D., Kingston, has been appointed house surgeon to the Royal Infirmary, Edinburgh.—Dr. Coburn has been appointed medical and statistical health officer for Fredericton, N.B.

Dr. W. H. Henderson, of Kingston, has been elected a life member of the Ophthalmological Society of Great Britain and Ireland. He has also been recently appointed to the chair of Histology in the Kingston Medical School. We regard the appointment as a good one, and calculated to reflect credit upon the school.

THE BULWER TRAGEDY.—Contrary to general expectation, the jury in this case acquitted Mrs. Coates of the murder of her husband by the administration of strychnine. The evidence pointed very strongly to the guilt of the woman, and the judge charged strongly for conviction; but the jury ignored his charge and acquitted the prisoner, because there was a doubt on their minds, owing to alleged carelessness in conducting the *post mortem*, as to whether the husband's death was caused by poisoning from strychnine, or from tetanus. It is an unusual thing for criminal charges to fall through from carelessness on the part of medical men in the conduct of *post mortem* examinations, and while we do not believe there was such carelessness as was alleged, we trust this case may be a warning and incentive to all who may be called upon in such cases to do their work most thoroughly and carefully.

PERSONALS—Dr. J. Workman, of Toronto, was elected an honorary member of the Italian Phreniatric Society, at its 4th Congress, held in the city of Voghera, between 16th and 22nd September.

Dr. Picault, of Montreal, was given a banquet on the 20th of September, by the French societies of the city, in commemoration of the 60th anniversary of his arrival in Canada.

Dr. H. J. Harrison has commenced practice in Cornwall, Ont.—Dr. W. Thornton is about to commence practice in New Richmond, Que.—G. S. Beck, M.D., M.R.C.S., Eng., of Peterboro, has returned from Europe.

THE HOMEWOOD RETREAT.—This is the name of a new private asylum for insane, just completed, in the city of Guelph, Ont. It will be under the charge of Dr. Lett, former assistant-superintendent of the Toronto Lunatic Asylum. Mr. Langmuir, former inspector of asylums, is president of the association. It is, we believe, now open for the reception of patients, and will accommodate about 50. Full particulars may be obtained on application to Dr. Lett, Asylum, Toronto. We commend the institution to the favorable consideration of the profession in Canada.

INSTANCES OF EXTRAORDINARY FECUNDITY.—F. P. Atkinson, Surbiton, Eng., publishes in the *British Medical Journal* for Sept. 15, 1883, the case of a lady of good position, who was married at sixteen and died at sixty-four, who had *thirty-nine* children all by the same husband. There were thirty-two daughters and seven sons with only two sets of twins. All the children attained their majority.

In the London Hospital Reports, Vol. I., 1864, it is reported that Mrs. W., now a nurse in the Hospital, was married in 1839, at 21 years of age. In nineteen years (*i.e.* in 1858), she had borne *twenty* children, *viz.*, eight single births, three times twins, and triplets twice.

CHROMIC ACID AS A CAUSTIC.—Dr. Squibb says chromic acid is a valuable caustic, "because it is self-limiting in its action in a degree that no other destructive caustic is. It is an active oxidizing agent and destroys the tissues to which it is applied by oxidation. In this respect it is like other caustics, as nitric acid. But every molecule of chromic acid which destroys a molecule of organic tissue is itself destroyed and rendered inert by being reduced to an insoluble oxide of chromium; and this principle and degree of self-limitation is not obtained from any other caustic."

HARVARD CENTENNIAL.—The centennial celebration of this well-known medical school was held on the 17th ult., and was a most successful

affair. An instructive and eloquent address was delivered by Dr. O. Wendell Holmes, and speeches by President Eliot, Dr. H. W. Williams, and Col. Henry Lee. The following representatives were present from Canada, and were invited to seats on the platform: Drs. Mullin, Hamilton; Aikins, Toronto; Howard, Campbell and Osler, Montreal; Atherton, Fredericton, N.B. An excellent collation was served after the close of the proceedings. In the evening a reception was given to the guests of the day at Young's Hotel, and refreshments served.

DISEASES OF THE SKIN.—Dr. Bulkley, of New York, will give a seventh course of lectures on Diseases of the Skin, in the New York Hospital, Wednesdays, at 2.30 P.M., commencing October 17th, 1883. The lectures will cover the entire subject of Diseases of the Skin (including Syphilis), and will be fully illustrated by colored plates, photographs and clinical cases. The course will consist of twenty lectures, and will be *free* to practitioners of medicine and medical students.

KERN'S POULTICES IN LYMPHO-SARCOMATA.—Prof. Busch, of Bonn, recently delivered a clinical lecture on the use of Kern's poultices in this disease. Kern's poultices consist of one part of mustard flour to five parts of black soap, the mixture to be enclosed in a gauze bag and applied to the growth for four or five hours every day. It produces intense irritation almost resembling erysipelas, and causes the tumor to soften and disappear.

SANITARY CONVENTION.—The Ontario Board of Health will hold a sanitary convention in London, Ont., on the 16th and 17th inst. Papers will be read upon various subjects connected with hygiene, and sanitary appliances of various kinds will be on exhibition. This is the second meeting of the kind in Ontario; the former was held in St. Thomas.

A NEW MEDICAL COLLEGE.—Steps have been taken by the profession in Winnipeg towards the establishment of a medical school. An act of incorporation will be applied for at the next session of the legislature. The names of the following gentlemen are mentioned in connection with

the movement: Drs. Codd, Kerr, Wilson, Jones, A. H. Ferguson, Patterson, Brett, Whiteford, Good, Blanchard, R. B. Ferguson and Sutherland.

OUR attention was recently called to the advertisement of Dr. Kane, of New York, in which he claims to cure the opium habit by a combination of remedies not named. Upon receipt of his circular, we became fully convinced of the character of the advertiser, and have to express our regret that the advertisement appeared in our columns.

ROYAL PRESENTATION.—Her Royal Highness the Princess Louise, before leaving Ottawa, presented Dr. Grant with a very handsome despatch box as a recognition of his kind services to her during her sojourn in Ottawa. Mrs. Grant was also the recipient from Her Royal Highness of a very pretty candelabrum.

OLD ANNOUNCEMENTS.—If any of our readers happen to have announcements of the old medical department of Victoria College for 1858-9, and for 1860-61, they would confer a favor by forwarding the same to this office. They are wanted to complete sets which are being made up for a college library.

BRITISH DIPLOMAS.—F. C. Astley, of Onslow, Que., has taken the L.R.C.P., Edin., and was subsequently elected F.O.S., Edin. Drs. J. E. Jenner, E. M. Hoople, and L. Backus (Trinity), and Dr. Doullson (Toronto), have passed for the L.R.C.P., London.

HARVEY'S REMAINS.—The remains of Dr. Harvey, discoverer of the circulation of the blood, have been recently removed from the vault at Hempstead in which they have lain many years, and placed in a sarcophagus in the chapel. The object is to insure protection against desecration.

REMOVALS.—Dr. Jas. Grange has removed from Peterboro' to Napanee. Dr. N. E. Chevalier has removed to Iberville, Que. Dr. A. McLeod has removed to New Westminster, B.C.

M.D., TORONTO UNIVERSITY.—Dr. R. E. Clapp, of Harriston, Ont., received the degree of M.D., Toronto University, at a meeting of the Senate on the 28th of Sept.

Books and Pamphlets.

A TEXT-BOOK OF GENERAL PATHOLOGICAL ANATOMY AND PATHOGENESIS, by Enst. Ziegler, Prof. of Pathological Anatomy in the University of Tubingen. Translated and edited by Donald McAlister, M.A., M.B., Cambridge.

This is a valuable compendium of the present knowledge of the various subjects embraced in the work, and it is well-deserving of patient study by every member of the medical profession who desires to keep up with the march of modern research. It is illustrated by 354 figures, some of which are executed in a very instructive form. The lettering in a few instances is defective or obscure, but considering the cheapness of the book, as indeed of the entire series of the "Wood's Library," artistic criticism should be very mild; and when we consider the impossibility of producing exact representations of morbid structures, which should serve as reliable illustrations of the ever varying phases and the endless varieties of pathological conditions, our appreciation of these productions of art must be very materially qualified. The student who derives his impressions of the pathological aspect of diseased structures from attractive plates and figures, (and very often the more attractive and dazzling all the more deceptive,) must find, when confronted in the autopsical theatre with the real objects, that he has been on the wrong road to useful knowledge. The English dress in which the translator has presented this work is truly charming. The style is faultless. If the rendering of the text is as accurate as it is pleasing, Dr. McAlister has done his part in a masterly way.

LECTURES ON FEVERS, by John R. Kippax, M.D., LL.B. Chicago: Gross & Delbridge. pp. 440.

These lectures contain the substance of the course on fevers delivered in the Chicago Homœopathic College during the session of 1882-83. The etiology, clinical history, differential diagnosis, and morbid anatomy, is given very fully and in a very attractive way, so that both those who attended the course, and those who read the work, cannot fail to be greatly benefited by it. The style is clear and concise, yet sufficiently full and complete. The exposition of the history and clinical character of the diseases treated of are on a level with the science of to-day. We only wish we could say as much for the treatment, but of course in regard to this there must of necessity be a difference of opinion.

ELEMENTS OF HISTOLOGY. By E. Klein, M.D., F.R.S., Joint Lecturer on General Anatomy and Physiology in the Medical School of St. Bartholomew's Hospital, London. Illustrated with one hundred and eighty-one engravings. Philadelphia: Henry C. Lea's Son & Co. 1883.

This little work will serve a useful purpose as a ready reference book for students and practitioners of medicine. The style is clear, and although the remarks upon each subject are very brief, they are nevertheless very complete. The book is well illustrated for a work of its size and pretensions.

QUIZ COMPENDS—Medicine, by Dr. Hughes; Surgery, by Dr. Horwitz; Anatomy, by Dr. Potter; Physiology, by Dr. Brubaker. Philadelphia: P. Blakiston & Son. Toronto: N. Ure & Co., \$1 each.

These little manuals are very well adapted for the purpose intended, and will be found useful as aids to the memory of the student and practitioner.

THE COLLECTIVE INVESTIGATIONS OF DIPHTHERIA. As conducted in the Detroit Therapeutic Gazette. With editorial summary. Detroit, Mich.: Geo. S. Davis, Publisher, 1883. pp. 120.

INDEX-CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE, U.S. Army. Vol. IV. E.—Fizes. Washington, D.C.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA—Thirty-fourth Annual Session, vol. xv.. Philadelphia: Collins, printer.

Births, Marriages and Deaths.

On the 2nd ult., W. Claxton, M.D., of Verona, to Edith Augusta, eldest daughter of Allen Bond, Esq., Inverary.

On the 18th ult., J. M. Johnston, M.D., etc., of Belmore, to Miss Emma Bland, youngest daughter of Luke Bland, Esq., of West Zorra.

At Amherst, on the 10th ult., R. Ripley, M.D., aged 46 years.

At Carp, Ont., on the 4th ult., T. A. Kidd, M.D. (Trinity), aged 25 years.

At Pine Orchard, Ont., on the 12th ult., Playter May, M.D., (Trinity), aged 26 years.

At Lifford, Ont., on the 24th ult., A. B. Wilson, student of Trinity College, aged 24 years.

* * * The charge for notices of Births, Marriages and Deaths is Fifty Cents, which should be forwarded in postage stamps with the communication.