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TWO CASES OF UN-UNITED FRACTURE.

BY N. E. M'KAY, M.D., C.M., HALIFAX, N.S.
(Surgeon to V. G. Hospital).

CASE I.—A. R., aged 18, single, a miner, was admitted into the Hospital, on the 31st August, suffering from an un-united fracture of the left humerus.

History obtained from Patient :

The patient while working at Spring Hill coal mines, jumped off a car in motion, a rope swinging around struck him on the left arm and knocked him insensible. When he recovered consciousness, he found he could not move his arm. A doctor was at once sent for, who diagnosed a fracture of the left humerus below the insertion of the deltoid muscle. The fracture was at once set, and the splints in which the arm was first put up were left undisturbed for nine weeks; they were then removed and the bones were found un-united. The arm was thereupon put up in plaster of Paris bandage, which was removed in eight weeks, and the fracture again found un-united. A consultation was then held, at which it was decided to slightly irritate the ends of the fragment by gently rubbing them together. This was done and the arm was put up in a plaster of Paris bandage for four or five weeks. When the splint was taken off, no union was found to have occurred. He then came to the hospital for treatment.

When admitted, patient was in very good health. The left humerus was found, on examination, fractured below the insertion of the deltoid, and the arm about one inch shorter than the other. He was unable to move his arm. A consultation of the medical staff was held on the 6th of Sept., at which it was decided to re-set the bones and

wire them. On the 8th of September I operated in the following way. The patient being etherized and an Esmarch applied, I washed the parts thoroughly with a carbolic solution, 1 in 40, and made an incision $3\frac{1}{2}$ inches in length over the seat of fracture, and in line with the outer border of the biceps and brachialis anticus muscles. On cutting through the integument and some areolar tissue, the cephalic vein was exposed and held to one side by an assistant. I then laid the border of the brachialis anticus muscle bare, and followed it down to the bone. The soft structures being now held well apart by two assistants, I laid open the periosteum and denuded the ends of the fragments. The ends of the bone being pushed through the wound, I removed a short piece from the end of each, at right angles with the axis of the shaft, and drilled a hole through each fragment from its periosteal surface, and brought their vivified surfaces together, and held the bones in position by silver wire. The hemorrhage was then checked and the wound washed with a carbolic acid solution, 1 in 40, and its edges were held in coaptation by catgut sutures, a drainage tube being first inserted. The arm was then put up in a rectangular splint, a trap being left over the wound to enable it to be dressed without disturbing the parts. It took over an hour and a half to perform the operation, which was done under a spray of carbolic acid, and with complete anti-septic precautions.

On the 10th of September, the 2nd day after the operation, the wound was dressed under the spray. It looked well; I removed the drainage tube and left it out; there was no discharge. On the 16th of September, the 8th day after the operation, the wound was again dressed under the spray, and the stitches were removed, union having taken place by first intention. On the 16th of October, when the splint was removed, good bony union was found to have taken place. The patient's temperature remained normal throughout.

On the 18th of November, as the patient was walking on the platform in front of the hospital, with his hands in his pant's pockets, his feet slipped and he fell heavily on his left side and re-fractured the humerus.

The arm was at once put up by the house surgeon on a rectangular splint, and left untouched

for about 20 days This splint was removed on the 10th December, and union found to be quite firm. I now put the arm up for two or three weeks in a plaster of Paris splint, which was made so as to embrace the shoulder. The patient was discharged, cured, on the 12th of January.

CASE II.—W. B., A teamster, aged 36, married, was admitted into the hospital on the 7th of October, 1886, suffering from an un-united fracture of the right femur.

History obtained from Patient.

On the 12th day of October, 1885, as the patient was driving a fish waggon, the horse took fright and ran away, throwing the patient forcibly on his right side on the hard sidewalk. On attempting to get up, he found he could not move his right leg. He was at once taken into the Wellington Barracks, where an army surgeon examined his leg and diagnosed "a fracture of right thigh," and put the fracture up temporarily to enable him to be carried home with safety. When he got home a doctor was immediately sent for, who put the leg up on a long side splint with an extension, and seven days after, applied short splints. For the next six or seven weeks the doctor assured him his leg was doing well. The splint was then removed, and to the surprise of the surgeon the bones were found un-united and the limb fully three inches shorter than its fellow. The leg was now put up for seven or eight weeks on a double inclined plane, which on being removed, the fracture was again found un-united, and the knee considerably swollen and very tender to the touch. During the following two or three weeks the limb was put up on a large side splint, for which a plaster of Paris spica bandage was subsequently substituted. This splint was left on for four or five weeks; it was then removed and no union found to have occurred. For the next eight or nine weeks the patient was allowed to go about on crutches. An operation was now performed, which consisted in subcutaneously irritating the ends of the fragments, and the leg was put up for twenty-five or thirty days in a plaster of Paris spica bandage; on removing this splint the bones were still found un-united. After this he was allowed to go about on crutches, and nothing was done for him until he came into the hospital. I saw the patient for the first time, seven or

eight weeks after the accident, in company with Dr. F., the attending surgeon. Liston's large side splint and the extension were taken off in my presence; I measured the limb and found it fully three inches shorter than the other, and there was no attempt at union of the fragments.

¶ On examination, the right femur was found fractured about two inches below the trochanter minor, and the limb fully $3\frac{1}{2}$ inches shorter than the other. The knee was ankylosed in the straight position, and tender to the touch. On letting his weight on the leg the bones glided easily over each other, and a distinct angular bend was produced in the thigh at the seat of fracture. The hip-joint was semi-ankylosed. There was no callus formed about the ends of the fragments. His general health was good.

On the 9th of October, a consultation of the medical staff was held, at which it was decided to re-set the bones.

On the 11th, I operated in the following way:—The patient being put under the influence of ether, and an Esmarch bandage applied, I washed the parts thoroughly in a carbolic solution (1 to 20) and made a vertical incision down to the bone, six or seven inches in length, on the outer aspect of the thigh, beginning about $\frac{1}{2}$ an inch below the upper border of the trochanter major; and made a second incision two inches in length, extending backward from the centre of the former and in right angles to it. On exposing the bones I found them overlapping fully three inches and bound tightly together by strong fibrous material. The lower end of the upper fragment was drawn upwards and forwards by the conjoined tendon of the psoas and iliacus, and the upper end of the lower fragment drawn up behind the other, pressing hard against it, and producing atrophy of it. The ends of the bones were very much atrophied and pointed, especially the end of the upper fragment. The periosteum being now laid open and the ends of the bones denuded, I applied extension and counter-extension to the limb by pulleys, and removed by a finger saw—the soft parts being first held well apart and protected by spatulæ—about an inch and a half from the end of each bone, and drilled a hole through each of them from its periosteal surface. I then brought the bones in position and held them there by stout platinum wire. The wound was washed thoroughly with a carbolic

solution (1 in 40); a rubber drainage tube was inserted, and the edges of the wound were brought into perfect coaptation and held there by silk sutures; a Lister's dressing was then applied and the limb put up on a single inclined plane. Owing to the semi-anchylosed condition of the hip-joint and the shortness of the upper fragment, and also the very small size of the ends of the bones, I found great difficulty in getting the bones into proper position, and in keeping them there during the after treatment of the case. The operation which was a very difficult one, occupied three hours, and was performed under a spray of carbolic acid, and with strict antiseptic precautions. On the afternoon of the day after the operation, his temperature rose to 100°, and on the afternoon of the second day it stood at 102°. From this time it began to gradually decline until the 17th day of October, the fifth day after the operation, when it stood normal and remained so. On the 14th of October, I removed the blood-stained dressing under the spray; the wound looked well; there was no discharge from it. Owing to the close proximity of the edge of the splint to the wound, I found it impossible to dress it antiseptically without disturbing the parts; and to overcome this difficulty I removed the inclined plane and applied a Croft's splint to the anterior aspect of the limb, extending from the ankle to about two inches above the highest point of the crest of the ilium; and a thin narrow wooden splint, well padded, to its posterior aspect, extending from the tuber ischii to the ankle; and to doubly secure the bones in position, I applied over Croft's splint, one of malleable iron, 1 inch by $\frac{1}{2}$ of an inch, extending from a little below the knee to about three inches above the crest of the ilium, and shaped to fit the limb. These were held firmly in position by plaster of Paris bandage, a trap being left to dress the wound, and the whole was suspended in a Salter's swing.

On the 19th day of October, the eighth day after the operation, I again dressed the wound under the spray, and found union had taken place by first intention, except a small portion in the centre of the wound. There was a little discharge of pus from the opening, and it continued to discharge a little until about the middle of November following. On the 21st of November the splints were removed and firm bony union found to have taken

place. A spica of plaster of Paris was now put on and the patient allowed to go about the ward on crutches. On the 1st of January, the plaster bandage was taken off, and a Thomas' splint for hip-joint disease substituted for it. On the 16th of January he was discharged cured. The limb was about $3\frac{3}{4}$ inches shorter than its fellow. Patient objected to have any attempt made to restore motion in the knee joint. At the time of writing this article he is able to walk without crutches.

NOTES ON ACETANILIDE.*

BY J. B. M'CONNELL, M.D.

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Acetanilide or antifebrin, although one of the latest additions to the list of antipyretics, can hardly be looked upon now as an untried remedy. The frequent references to it in the medical periodicals indicate that it has had extensive trial.

There have been of late so many new therapeutic agents, or new applications of those already in use, heralded forth as great gains in the treatment of disease, and which have, after a brief existence, been found wanting, and disappeared like meteors below the therapeutic horizon; that the great mass of the profession are prone to regard new remedies with some suspicion; hence my apology for relating, so limited, an experience with this remedy, is that we may be favored with the views of the members of this Society who may have tested its actions.

In August, 1886, Drs. Cahn and Hepp, of Prof Kussmaul's clinic, Strasburg, published in the *Centralblatt für Klinische Medicin* a resumé of what they had discovered as being the actions of acetanilide. The drug, which may be prepared by the application of heat to aniline acetate, had already in 1853 been produced by Gerhardt, by the action of aniline on acetylchloride, or anhydrous acetic acid. It is a white, scaly powder, resembling santonin; odorless, slightly pungent, insoluble in cold water, sparingly in hot, but readily in alcohol. It melts at 113° C. and distils unchanged at 292° C., is neither acid nor alkaline, and resists the majority of reagents. It belongs to the group phenylacetamides or acetanilides, wholly different from those

*Read before the Medico Chirurgical Society, Montreal, on October, 29th 1887.

containing the majority of antipyretics, as the phenols, which have carbolic acid, hydrochinon, resorcin, salicylic acid, or the chinoline order, which contains chinolin, kairin, antipyrin, quinine and thallin. To discover adulteration with aniline, which is *poisonous*, Yvon recommends adding hydrobromide of sodium to acetanilide, rubbed up with water. If aniline is present, a reddish-orange precipitate is found, if pure it will remain clear. Treating it with mercurio-nitrate produces a green coloring matter, soluble in alcohol.

Actions claimed for it. That in an hour after administration the temperature will begin to fall, reaching its maximum in about four hours after, when, in proper doses, normal temperature is reached or lower, its effect passing off in three to ten hours, the fall in temperature being accompanied by redness of the skin and perspiration. The pulse is reduced simultaneously and arterial tension raised; it produces no untoward effects; no nausea, vomiting or diarrhea, the appetite improving under its use. That it calms the nervous system, inducing sleep; relieves pain, headache, etc.; acts in doses of from four to fifteen grs., four grs. being equal in effect to sixteen grs. antipyrin.

Dr. Weill, a pupil of Dujardin Beaumetz, in the *Bulletin Générale de Thérapeutique*, gives these conclusions: "Acetanilide exerts a predominant influence on the nervous system, manifested by collapse, after a short period of excitement; generalized anesthesia and analgesia, increased intravascular pressure and peripheral vaso-constriction; in toxic doses, progressively reduces oxyhæmoglobin, and finally changes it into methæmoglobin, and that it is of great utility in subduing morbid over-excitability in nervous diseases."

It has but little action in modifying temperature in health; large doses may cause death (25 to 50 centigrammes per kilogramme of animal). Symptoms are; stupor, prostration, fall of temperature, depression of respiration, analgesia, anaesthesia, collapse. Animals experimented upon lived 24 to 36 hours; it is not, according to Miquel, antiseptic. Its antithermic action is unequal, disease and idiosyncrasy having a marked influence on its action; it sometimes causes cyanosis, which does not appear to be harmful.

Dujardin Beaumetz and Prof. Charcot consider it superior to every other medicament in pain

linked with nerve alteration, and regard it superior in rheumatic neuralgia, muscular and articular pains, to salicylic acid. It is especially useful in the painful crises of locomotor ataxia, but loses its effect in two or three weeks. This is corroborated by Fischer, of Cannstatt, and Lepine, of Lyons, who recommends 30 gr. doses if necessary; no ill effects result in non-febrile states. Fischer found it of decided advantage in affording amelioration in all forms of paroxysmal pain. Professor Dujard in Beaumetz did not find it of much service in epilepsy.

Dr. Gabriel Pavai Vajna regards it as superior to quinine in phthisis and equal to salicylic acid in acute rheumatism. It is inexpensive, being only 10 francs per kilogramme in France. Most of these effects were illustrated in the twenty cases in which I have administered it. Nine were cases of typhoid fever, in all of which the temperature was promptly reduced. The following case may be regarded as typical of its action in this disease:

CASE IX. Girl, aged 9; Oct. 25th was seventh day of fever; at 5 p.m., five grs. acetanilide were given, when pulse was 120, respirations 28, and temperature $105\frac{2}{3}^{\circ}$.

	Pulse.	resp.	temp.	
5.00 p.m.	120,	28,	$105\frac{2}{3}^{\circ}$	—Face and general surface pale, dry, and hot.
5.10 "	120,	28,	105°	—Pink flush on both cheeks, pulse stronger.
5.20 "	120,	32,	$104\frac{3}{8}^{\circ}$	—Forehead, neck and trunk moist, and whole surface of reddish hue; somewhat more restless.
5.30 "	112,	32,	$103\frac{3}{8}^{\circ}$	—Has become tranquil and fallen asleep; skin moist, no visible perspiration.
6.00 "	120,	30,	$102\frac{2}{3}^{\circ}$	—Surface in same condition; still sleeping.
6.30 "	108,	24,	$100\frac{3}{8}^{\circ}$	
7.00 "	102,	24,	100°	—Asked for a piece of bread.
7.30 "	102,	24,	100°	
8.00 "	108,	25,	$100\frac{3}{8}^{\circ}$	—Skin has become dry.
8.30 "	108,	30,	101°	—Pulse diminished in volume and of less force.
9.00 "	112,	30,	$101\frac{3}{8}^{\circ}$	
9.30 "	112,	30,	$102\frac{3}{8}^{\circ}$	
10.00 "	116,	28,	$102\frac{1}{2}^{\circ}$	
10.30 "	120,	30,	$103\frac{1}{2}^{\circ}$	
11.00 "	120,	32,	103°	
1.20 a.m.	120,	30,	$103\frac{2}{3}^{\circ}$	

Oct. 26, 11 a.m.,—Mother states child appeared to be very feverish from 12 to 8 a.m., and was restless and drank milk frequently. Six grs. were

given to-day; same effects observed, only there was more perspiration, and temperature became normal, remaining so for only an hour. Temperature subsequently rose on the 30th to 106°, and on the 31st to 106½°, but was always reduced to about normal; but the doses were increased to 8 grs. Three and four doses were required in the 24 hours to keep the temperature at or about normal, child resting quietly after each dose and taking nourishment freely at present date, Nov. 7th. It would seem in this case that the temperature, after the effects of acetanilide have passed away, rose higher through its action. An unusual degree of anemia was present when the period of convalescence arrived.

CASE I.—Boy aged 12, typhoid. Oct. 20th, 1.30 p.m., ninth day of fever, pulse 120, temperature 104½°; five grs. reduced temperature to 98½° in three hours. This dose acted in the same manner on the 21st and 22nd. Did not again rise above 102°, and gradually declined.

CASE II. has a similar record, and also Case XVI.

CASE III.—Young lady, aged 29 years, mild typhoid. Sept. 11th, tenth day; has had troublesome headache since she became ill, and could not sleep during last two nights. Six grs. acetanilide were given at 10 p.m. Patient fell asleep in fifteen minutes and slept all night, and was free from pain when she awakened; it returned the two following days, but was slight.

CASE IV.—Lad, aged 12, typhoid. On March 28th, the twenty-seventh day of fever, temperature was 104½°. Six grs. acetanilide caused a profuse perspiration and slight cyanosis. Subsequently 4 grs. reduced the temperature below normal; 3 grs. was found to be a sufficient dose. After April 1st, temperature gradually came down to normal.

CASE V.—Young lady, aged 19, mild typhoid. The severe headache was also promptly relieved by 6 grs. acetanilide; did not return.

CASE VI.—Boy, aged 9, double lobar pneumonia. June 13th, pulse 144, respirations 48, temperature 105½°; 5 grs. acetanilide reduced temperature to normal in three hours. In five hours after dose, pulse 120, temperature 100½°, respirations 32. 14th, 1 p.m., pulse 140, respirations 44, temperature 106°; at 2 p.m., 5 grs. were given; at 5 p.m., temperature 97½°, and at 9.30, pulse 132, temperature 102½°, respirations 36. 16th, 5 grs. at 2 p.m.

reduced temperature from 105 to 101½° in three hours; 11 p.m., pulse 112, temperature 102½°, respirations 56. 19th, 11 a.m., respirations 68, pulse 120, temperature 103½°. 20th, temperature normal.

CASE VII.—Septicemia (Puerperal). Patient aged 37, her first child. Forceps used and artificial extraction of placenta; antiseptic uterine douches were used and iodoform suppositories. Temperature was not high until the tenth day; 104°; on the eleventh day 8 grs. acetanilide reduced temperature to normal. Did not rise again above 102°; curette used on the thirteenth day; in two days after, temperature was normal, with slight evening exacerbations.

CASE VIII.—Young man, aged 23, pneumonia (double). On Oct. 16th, sixth day, pulse 120, respirations 64, temperature 103½°; 8 grs. reduced temperature, causing profuse perspiration. 17th, 1 p.m., temperature 102½°; 8 p.m., temperature 99½°, pulse 90, respirations 36.

CASE X. has much the same record as case IX.

CASE XI.—Puerperal Septicemia. Patient confined in a house where there was a case of erysipelas in next room. All antiseptic precautions were observed, but next day temperature was 105½°; uterine douches of corrosive sublimate, followed by carbolic acid and then iodoform suppositories were used; 8 grs. acetanilide brought temperature to normal, with profuse sweating. This dose was repeated on the two following days, after which there was no further elevation of temperature.

CASE XII.—Nervous headache, lady aged 28, had lasted two days; 5 grs. acetanilide gave complete relief in about two hours. Same results in two subsequent attacks.

CASE XIII.—Erysipelas. Boy aged 15. Oct. 27th, noon, 7 grs. acetanilide were administered; temperature was 104½°. In three hours temperature was still 103°; 8 grs. were then given; in two hours temperature was 102°. 28th, 2.30 p.m., pulse 110, temperature 105½°; 15 grs. acetanilide were given. In 3½ hours temperature was 100°; in 4½ hours after, respirations 20, temperature 99½°; perspiration has ceased. For several days these large doses were required to keep temperature down; no fever Nov. 2nd.

CASE XIV.—Lady, aged 22, one day ill. Severe headache, general soreness, pains in back, anorexia, coated tongue, and temperature 104½°; 8 grs.

acetanilide at 10 p.m., purgative in morning. Went asleep shortly after taking powder. Temperature next day normal; no headache; feeling quite well.

In CASE XV, typhoid, young man aged 21, half-hour record of temperature was kept on the two occasions when it was administered, with results similar to Case IX.

The latest accepted theory as to the cause of fever, according to H. C. Wood, Macalister, of Glasgow, and others is, that it is a disturbance of calorification in which through the nervous system, heat production and heat dissipation are both affected; that there is a nervous centre which inhibits the production of heat and a thermogenic centre (located by Aronsohn and Sachs at the inner side of the corpus striatum), which excites tissue change; that heat dissipation is regulated by the vaso-motor nerves; that temperature is no indication of the amount of fever, as heat production may be normal, but elevation of temperature result from diminished heat loss, and we may have increased heat production (pyrexia), but owing to accelerated heat loss, no elevation of temperature, hyperpyrexia ensues when heat production is increased, with lessened heat loss.

Antipyretics act either by lessening the production of heat, as quinine, salicylic acid and the cardiac and vascular depressants, or by increasing the loss of heat, as alcohol, sudorifics, antipyrin, etc. Acetanilide belongs to the latter group.

From the reports of these cases we can learn: That acetanilide in proper doses will, in the elevation of temperature of typhoid fever, pneumonia, erysipelas, septicemia, and doubtless other febrile states, bring about a state of apyrexia, or a sub-normal temperature if the dose is larger, in from two to four hours; the temperature beginning to fall usually in from ten to fifteen minutes after its administration, instead of an hour, as hitherto usually reported; the reduction is ordinarily 5° or 6°, and may be over 8° (Case VI. 8½). The dose varies from 6 to 15 grs. for an adult, is easy of administration and best given in wine or simple elixir. In an hour or two after the lowest temperature the dose produces is reached, it again begins to rise and in four to eight hours may be as high as before the dose was taken; or it may not run as high again for several days, or even throughout the illness.

Idiosyncrasy or individual susceptibility to the action of acetanilide varies considerably, and in cases where there is not any apparent evidence for anticipating dissimilar effects. Disease also exercises a modifying influence. Cases of erysipelas require larger than ordinary doses. Hence it is advisable to begin with small doses and increase, if necessary, until the quantity which will bring the temperature down to normal, is learned. It first stimulates the vaso-motor (constrictor) system, leading to increased arterial tension, quickly followed by dilatation of the cutaneous arterioles, thus permitting increased radiation of heat; perspiration immediately supervenes and the temperature rapidly declines, with lowered arterial tension. It is an analgesic, giving speedy relief in neuralgic pain and headache, being especially serviceable in the headache present in the early stages of typhoid fever. It is also a reliable hypnotic and nervous sedative in the sleeplessness and excitability of febrile states. It doubtless, in over doses, as evidenced by cyanosis, inhibits the respiratory functions of the blood, probably as has been explained, by so modifying the hæmoglobin, that less oxygen is conveyed by the corpuscles, and a state of internal asphyxia ensues; the diminished oxidation resulting in lessened heat production. It has no influence in shortening the course of zymotic affections; hence in typhoid, would not consider its administration indicated unless the evening temperature was over 103° F., the dose to be repeated every six hours as necessary. No untoward effects result when proper doses are given; on the contrary, it is almost an invariable remark of patients taking the remedy that they feel better, and in a state of apyrexia, may experience hunger. Even in over doses the temporary cyanosis is quickly recovered from without any evil result.

ON THE NECESSITY FOR A MODIFICATION OF CERTAIN PHYSIOLOGICAL DOCTRINES REGARDING THE INTERRELATIONS OF NERVE AND MUSCLE.

BY THOMAS W. POOLE, M.D., LINDSAY, ONT.*

THE CHEYNE-STOKES RESPIRATION.

What seems a lower depth of absurdity, if possible, has yet to be reached in the explanations of the Cheyne-Stokes respiration. I quote here from Dr. L. Sansom's "Physical Diagnosis of the

* Read before the Physiological Section of the Ninth International Medical Congress, held in Washington, September, 1887.

Heart," (a) by whom Traube's theory on this subject is said to be "the most plausible." According to Traube, "the first thing which occurs is the establishment of a condition of impaired irritability of the respiratory centre through mal-oxygenation; the long respiratory arrest gives time for the accumulation of carbonic acid in excess in the blood. Arrived at a certain maximum this begins to stimulate, slowly and imperfectly at first and afterwards in increasing degrees, the centre, so that it develops the respiratory efforts till they culminate in dyspnea. Then as the centre ceases to be stimulated or becomes exhausted, dyspnea again supervenes."

It will be observed that here the *deficiency* of oxygen and subsequently the *presence* of carbonic acid are made to play opposite and antagonistic parts! The lack of oxygen (instead of stimulating the medulla, as supposed by Dr. M. Foster) first enfeebles the respiratory centre, in the medulla, and then the same blood, still deficient in oxygen, but now loaded with carbonic acid, counteracts the previous depression, and tones up the weak nerve centre, so that ere long it displays extraordinary activity. But, unfortunately, this exhilarating pabulum—carbonic acid—is soon exhausted, and the nerve centre resumes its former feebleness till a new supply can be procured. The physiologist is certainly quite impartial, and allows the rivals to have their "innings," turn about. How such nonsense as this "most plausible theory" could find a place in physiological literature seems explicable only on the exigency of the hypothesis so long in vogue.

Filehne's theory in explanation of this state is more complicated, and at least equally absurd. Instead of the respiratory centre being stimulated (as Traube says), it is the vasomotor centre which is excited by the presence of carbonic acid. Arterial contraction follows till "a gradually increasing anemia of the respiratory centre" is brought about. This anemic condition excites the respiratory centre "and inspiration becomes more and more deep," till oxygen is supplied to the blood; "the arterial spasm is thus relieved," owing to the freshly oxygenated blood failing to stimulate the vasomotor centre (so as to contract the arteries), as the carbonic acid had previously done. With

the relief of arterial spasm, and a consequent normal dilation of the arteries, "the anemia of the respiratory centre passes off, and with it the exaggerated impulse to respiration, and breathing once more becomes superficial." (b). In other words the respiratory centre functionates best when it is supplied not only with non-arterialized blood, but when it has too little even of that; as soon as the anemia passes off, and this nervous centre gets a fair supply of blood, it ceases to act—suspends business—till the better times of bad blood and deficient blood come round again, when it is moved to activity once more!

There is still another explanatory theory to be noticed, which I find referred to editorially in the CANADA LANCET for February, 1886: "Bramwell, who follows the teaching of M. Foster and others, supposes that the respiratory centre consists of two portions, one accelerating (or motor), and one inhibitory. He further believes that these two portions are acted on in opposite directions by the blood, whether arterial or venous. Thus while venous blood stimulates the discharging cells of the centre and depresses the inhibitory portion, arterial blood acts in exactly the opposite direction." At the close of the period of apnoea, the discharging portion of the centre is stimulated by the venous blood," with its excess of carbonic acid, and this same blood, at the same time is depressing the rival, or inhibitory part of the centre. The motor or discharging portion of the centre triumphs; respiration becomes established and even exaggerated. Unhappily, the victor fails to "hold the fort." As soon as the blood becomes "fully oxygenated," the "inhibitory portion becomes stimulated and gradually overpowers the discharging portion," so that "the respirations grow weaker and weaker until the state of apnoea results." Then the suspension of breathing restores the venous character of the blood and accumulates a store of carbonic acid, the stimulation of which reanimates the centre previously depressed by the presence of oxygen in the blood. Such appears to be the scope of this theory.

In this, as in the previous explanations, arterial blood is made to play the part of a depressor and paralyzer of the respiratory process, which it is constantly tending to arrest; but while paralyzing

(a) P. 37.

(b) P. 137.

one portion of the respiratory centre it is stimulating another; and a similar double character is attributed to the action of venous blood. Thus during the brief time from the beginning of apnoea to the culmination of dyspnoea—a period rarely exceeding one minute—the blood passing to the brain is called upon to exert four different and even diverse effects; first as venous blood stimulating one part of the respiratory centre and paralyzing another portion of the same centre; reverse effects being produced by the same blood on its becoming oxygenated. One is really at a loss to understand how such an explanation could have been admitted to a place in physiological literature. Again it is the exigences of an erroneous theory which have led to such a complicated and unsatisfactory hypothesis. If it be asked how the state of apnoea is induced by forced vigorous respirations, if it be not due to an excess of oxygen introduced into the blood, and how the opposite condition or demand for air by breathing seems to attend the absence of oxygen and the presence of venous blood, I can only answer as to the last that if no better explanation than that venous blood is a stimulant has yet been found, some better explanation is surely to be looked for. And as to the state of apnoea referred to, I find Dr. Austin Flint stating that “according to Hoppe-Seyler, apnoea, in the limited sense above mentioned, is to be attributed, not to an excess of oxygen in the blood, but to fatigue of the respiratory muscles.” (a)

A NEW THEORY SUGGESTED.

Dr. Sansom regards the condition of the respiratory centre in this case as one of paresis and direct exhaustion. Hé shows that during the apnoeal period “the arteries are strongly contracted.” The proof of this is found in the rise of arterial tension in the depression of the “great fontanelle” of the head, and also in the arrest of the process by the inhalation of nitrite of amyl, which dilates the arteries. On the theory of these pages, arterial contraction is due to vasomotor nerve depression or paralysis; and accordingly we find here that the vasomotor centre, as well as the respiratory centre, is depressed in function. It has been amply shown above, that contraction of the arteries occurs in the dying and is complete in

death. It is also one of the prominent phenomena during the last stages of asphyxia and is invariably attended by venous fullness. The condition present during the stage of apnoea in the Cheyne-Stokes respiration, with its contracted arteries and dilated veins, appears to correspond very closely to that present as death approaches and in the latter stages of asphyxia. The original parietic and exhausted condition of the respiratory and vasomotor centres is aggravated by the further depression caused by mal-oxygenation of the blood; which, when venous and loaded with carbonic acid, is invariably a depressing, and never a stimulating agent to nerve function. Vasomotor nerve failure induces contraction of the arterioles, systemic emptiness and venous engorgement, as the foregoing examples abundantly prove; and as a consequence, the great mass of blood “becomes lodged and hidden as it were” in the great venous trunks. At that moment death is very near, but as the heart continues to beat, it is fair to assume that a small quantity of blood still finds its way through the lungs, and, from its very scantiness, is capable of being aerated by means of the exchanges of gases still going on in the lungs, owing to the presence of residual air during the temporary, partial or complete arrest of respiration. As a consequence the quantity of blood reaching the nerve centres, though small, is at least partially oxygenated, and serves to revive the function of these centres “imperfectly at first,” but with momentary improvement. The effect of this revival on the vasomotor centre, is to facilitate the dilation of the arterioles; in which the pulmonary vessels share, permitting, ere long, the inrush of venous blood from the distended vena cava and portal system, and its transmission onwards through the heart and lungs. This corresponds to the period of increase in respiratory function, in which the laborious efforts of a feeble mechanism have been mistaken for an “exaggerated impulse” from excited and overacting or “exploding” nerve centres. Meanwhile, impure blood from the venous reservoirs (finding an entrance through the now fairly dilated pulmonary vessels) begins to fill the lungs in such a quantity (as it is drawn onwards by an inequality of pressure, towards the as yet unfilled arteries) that the whole mass of blood, failing to be arterIALIZED with sufficient rapidity, again becomes unfit for the

(a) *Prac. of Med.*, 5th Ed., p. 70.

maintenance of nerve-function and the perpetuation of processes depending upon it.

In such a case a previously weak organ or centre is the first to suffer. The medulla oblongata is such an organ in this case, and its contiguous centres for respiration and circulation fail together; bad blood and deficient blood, acting on centres previously parietic or enfeebled, have done their work, and again the respiration is suspended. The vasomotor centre is again so functionally weakened that it loses control of the arterial muscle—the “inherent contractile force,” which all physiologists assign to muscular tissue, thus freed (as in the example enumerated above) induces “the strong arterial contraction” referred to by Dr. Sansom, which contraction of the artery is all the stronger the nearer nerve force is to cease in the extinction of life. This arterial, or systemic contraction, again empties the lungs and refills the venous reservoirs from which the blood is again drawn, at first slowly and then again more rapidly, as the process repeats itself. Here, then, is an explanation of the Cheyne-Stokes respiration based upon sound, though as yet unacknowledged, physiological principles according to which parietic and enfeebled nerve centres are helped by their appropriate pabulum—oxygenated blood—and are overwhelmed and have their function suspended by what is naturally calculated to poison and paralyze them, impure venous blood, deficient in oxygen and loaded with carbonic acid.

THE INTESTINAL AND UTERINE MUSCLES.

In sustaining the contention that, as a rule, muscles of the involuntary class contract, not when stimulated by their appropriate nerves, but when deprived of nerve energy, I have not yet alluded to the involuntary muscular fibres of the intestines and uterus. The antagonism of nerve and muscle is not here so evident as in the cases already cited, but here the relations of nerve and muscle have not as yet been completely investigated. (a)

Dr. M. Foster states that section of the vagi “renders difficult the passage of food along the cesophagus,” and causes “a spasmodic contraction of the cardiac orifice of the stomach; in other words, the tonic action of the sphincter is increased”; (b) facts which sustain what has been

already stated above as to the non-paralyzation of the muscles concerned, after section of their nerves. The peristaltic movements of the intestine, he states, may occur “wholly independent of the central nervous system,” and are “at bottom automatic.” (c) We have it on the authority of the late Dr. W. B. Carpenter, F.R.S., that “the intestinal tube from the stomach to the rectum is not dependent upon the nervous centres either for its contractility or for its power of exercising it, but is enabled to propel its contents by its own inherent powers.” (d) So also of the uterus, the contractions of which are not due to a reflex activity of the spinal cord, but to its own inherent power of contraction; parturition having taken place after destructive injury and paralysis of the cord, and even after somatic death. (e) In these cases, also, the nerve would seem to be useless as the ally of the muscle, but would play an important part in controlling and regulating, by antagonizing, its contractile energy.

I must notice, in this connection, an observation of Dr. M. Foster regarding the bladder. He says: “The escape of the fluid [from the bladder] is, however, prevented by the resistance offered by the elastic fibres of the urethra, which keep the urethric channel closed. Some maintain that a tonic contraction of the sphincter vesicae aids in, or, indeed, is the chief cause, of this retention. The continuity of the sphincter vesicae with the rest of the circular fibres of the bladder suggests that it probably is not a sphincter, but that its use lies in its contracting after the rest of the vesical fibres and thus finishing the evacuation of the bladder. On the other hand the fact that the neck of the bladder can withstand a pressure of twenty inches of water so long as the bladder is governed by an intact spinal cord, but a pressure of six inches only when the lumbar cord is destroyed or the vesical nerves are severed, affords very strong evidence in favor of the view that the obstruction at the neck of the bladder to the exit of urine depends upon some tonic contraction maintained by a reflex or automatic action of the lumbar spinal cord.” (f) But this experiment admits of a very different inference. We have just seen, on the authority of Dr. M. Foster, that section of the chief motor nerves of the stomach

(c) Phys. p. 348. (d) Hum. Phys., p. 410.
(e) Ib., pp. 979 and 980. (f) Phys., p. 448.

(a) Dr. L. Brunton. (b) Phys. pp. 346, 347.

"increases the tonic action of the sphincter" of the stomach, as we had before seen it does of the entire contractile tissues of that viscus. We have a right to look for a similar increase of tonic contraction in the bladder, when deprived of its nervous connection with the spinal cord, or when the latter is paralyzed. Admit that here, as in the examples cited above, the spinal nerves exercise a restraint over the contractile fibres of the bladder, tending to prevent its contraction. With this restraint intact, the bladder, is able to bear a pressure of twenty inches of water before the sphincter is overcome; whereas, with nerve influence withdrawn by section or paralysis, and the muscular fibres of the bladder set free to contract (as in the case of the esophagus and stomach), the resistance at the outlet, though also relatively increased, is overcome by the superior expelling force from above with the aid of only six inches of water-pressure. The same principle applies to involuntary discharges from the rectum, which Drs. Todd and Bowman say is due not to paralysis of the sphincter, against which the feces are driven, but to the "active pressure of the parts above which are not paralyzed."^(a) The "parts above" are the intestinal muscles, which in the last stages of exhausting disease (when such discharges usually occur), have attained their freedom, just as the arterial muscles do under like circumstances, owing to the general decadence of nervous energy.

VOMITING OF PREGNANCY.

With the evidence before us as to the contraction of the gastric muscle on severance of its nerves, vomiting in general may surely be regarded as due to nerve depression rather than to nervous excitation. An additional observation in proof of the same is to be found in the fact that injury of the vagus may produce constant vomiting^(b), and further, that vomiting is mentioned by Dr. C. Bastian among the symptoms of hemiplegia.^(c) An explanation of the vomiting of pregnancy would be found if we might assume that a monopoly of nerve energy was being expended in the uterus, owing to the extraordinary developments taking place in that organ, thus starving the gastric nerves, so to speak, which, no longer

able to sustain the gastric muscle, permit the untimely and abnormal contractions of that viscus. That this occurs chiefly in the early months of pregnancy might be accounted for by the unusual demand rather suddenly made upon the nervous resources, which tend to equalize their expenditure as the months go on and the organism becomes accustomed to its new condition.

(To be Continued).

CASES IN PRACTICE.

Lilly I—, æt. seven years, a pale, thin, sallow child, had for the past three years been greatly troubled with worms, often passing a large number after taking the usual vermifuges. General health had been good; active in habit and cheerful. Had been out the day before I was called in, playing in the snow in the intensely cold weather the first week in January. Came home complaining of feeling sick with pain in right iliac region. I was called in on the following day, 7th January, and found her feverish, vomiting and restless, with anxious expression and great pain on pressure over painful region. On her mother telling me that she had vomited as well as passed, per rectum, several large round worms, I prescribed santonin with calomel, and gave an alkaline fever mixture. The next day she was less feverish, had less pain, but the vomiting was incessant, with considerable prostration. I ordered bismuth and oxalate of cerium and brandy. The symptoms were worse on the 9th, the pain on pressure being greater and extending over a greater area. Repeated the santonin, and gave scale pepsine, which apparently allayed the vomiting for a while. On the 10th her sufferings were so severe that I was obliged to give opium, with the effect of easing the pain and stopping the vomiting, but the tympanites increased. In the meantime injections had been given to keep the bowels open.

On 11th, all symptoms were worse; pain incessant, tympanites great, vomiting large quantities of green liquid. She died at 10 p.m., perforation evidently having taken place. No worms had passed for several days, but the vomiting being so troublesome it was impossible for her to retain medicine or nourishment.

Assisted by Dr. Storms, I made a hasty post mortem, which was all that could be obtained

(a) Path. Anat., p. 180.

(b) Bryant's Surgery, Amer. Ed., p. 208.

(c) Brain Disease, p. 56.

under the circumstances. On opening the abdomen, we found the bowels covered with pus, and the usual evidence of extensive inflammation. In the stomach we found two or three large lumbrici, but the duodenum and whole of the intestines down to the rectum were completely filled with large round worms. At every incision I made I could draw out masses of worms twisted together in every way. I suppose out of some eight or ten incisions I took over one hundred worms, but this did not represent a tenth part of what the intestines evidently contained. Lack of time prevented me making a thorough examination, and finding the exact number present. I have never before met such a case, and perhaps it may be of interest to some of your readers.

WM. GEDDES STARK.

Hamilton, Feb. 10th, 1888.

CASES IN PRACTICE.

The following observations may be of interest to the profession, showing as they do how an intercurrent rash may be developed during the course of an attack of chicken-pox or small-pox.

W. F. B., æt. 10 years, was attacked with vari-cella. Pocks full and large on Monday, 16th inst.; on Wednesday, 18th inst., scarlatinal rash appeared; and on Sunday, 22nd inst., the rash was fading rapidly. The boy now appears to be doing nicely. The scarlatinal rash was profuse. Nearly 21 years ago, during an epidemic of small-pox, I attended a young woman on whom, on or about the second week of that disease, a rash appeared in the interspaces of the pocks, which developed in the usual time, into an apparently well marked case of measles, ran the usual course and disappeared, ere the traces of the pocks had disappeared.

A. ARMSTRONG.

Arnprior, Feb., 1888.

Correspondence.

OUR LONDON LETTER.

(From Our Own Correspondent.)

LONDON, Feb. 12th, 1888.

CLINICAL NOTES.

The following case of severe endocarditis, with recovery under large doses of sodium sulpho-carb-olate, may prove of interest to readers of the LANCET.

Patient, Ellen H., aged twenty, under care of Dr. Sansom, London Hospital, was poorly nourished, somewhat anemic, extremely weak and prostrate. She complained of a sensation of weight at the heart and a pain that encircled her at the level of the diaphragm. Had some family history of rheumatism, and the patient herself was said to have suffered from rheumatism, with inflammation of the lungs, twelve months previously. Present illness commenced with sore throat, followed by pain in the head and left side, and for a week before admission she coughed and spat up a little blood. Breath sounds were deficient at base of left lung, together with slight comparative dulness. The outline of the heart, as determined by percussion, seemed normal; there was a soft systolic murmur at the apex. The urine was of sp. gr. 1020, acid, contained a little mucus, but no albumen. Patient was fretful and complaining, dozing during day, and wakeful at night, asserting that she suffered pain in varying situations; frequently groaning. The temperature was 104.5° F. For seven weeks she continued in a very unsatisfactory condition. During this time the signs of auscultation of the heart varied considerably. The systolic murmur which was at first soft and slightly pronounced, became musical in quality, and was heard down the left border of the sternum, as well as in its former situation. The second sound heard over the site of the pulmonary valves, was one day slightly pronounced, on another it was accentuated, on another but feebly heard. Five weeks after admission a short diastolic murmur was heard at the left border of the sternum, at the level of the sixth rib; this became more and more marked and was heard at a higher level, showing that the endocarditis was progressing. Observation of the pulse by the finger indicated low tension, but not nearly to such degree as was revealed by the sphygmographic tracing. The general condition of the patient somewhat resembled that of typhoid; the peculiar hebetude, constipation, alternating with diarrhoea, continued prostration, rapid wasting, and irregular breathing, the rate of respiration varying from twenty-eight to forty-eight.

The patient was first put upon tincture of perchloride of iron in fifteen minim doses, with twelve minims of tincture of digitalis; the throat, still sore, being gargled with a solution of chlorate of potassium. This plan of treatment, with a slight

opiate occasionally, was continued for thirteen days, then alkalies with digitalis were administered. The case showing no amendment, quinine sulphate in five-grain doses with hydrobromic acid three times a day for five days, twice a day afterwards, was prescribed, and small blisters were applied over the heart region. There being no improvement, but the reverse, the sulpho-carbolate of sodium in thirty grain doses three times a day was administered. Carbolized oil, one part of pure carbolic acid in four parts of olive oil, also was rubbed into the chest and back twice a day. At the end of five days the general condition began to improve, and two days after it was noted that the patient slept well and had a good appetite. She still made many complaints of pain, and the mental condition was unstable, but there was a progressive improvement in all the general signs, and after twenty-three days of this treatment, appetite was good, bowels regular, temperature normal and patient asserted that she felt better. She was now in a totally different mental condition, the hebetude having quite passed away. The sulpho-carbolate was now omitted and the tincture of perchloride of iron, ten minims with five minims of tincture of digitalis in infusion of quassia, ordered, and shortly afterwards the patient was discharged, active, cheerful and bright.

In cases of ozena, the following is prescribed at the hospital for diseases of the throat and nose: R—Sod.-bicarb., grs. xij; acid carbol., gr. iss; aq. ad. ℥j; fiat lotio. Sig.—Teaspoonful in half a teacupful of lukewarm water, to be sniffed up the nose night and morning, followed by insufflation of equal parts of iodol and bismuth carb., and pil. strych. et ferri given three times a day.

In acute tonsillitis, the following treatment proves to be most effectual. First washing out the mouth and pharynx with liq. calcis, then freely rubbing the inflamed tonsils every hour with sod. bicarb., applied with the finger; the following mixture being taken internally: R—Tinct. ferri. perchlor., ℥ij; glycerine ad. ℥ij. Sig.—Teaspoonful every two hours.

In post nasal catarrh associated with deafness, the following is a favorite lotion: R—Ammon. chlorid., ℥j; sodii. chlorid., ℥ijss. Sig.—Teaspoonful in tumblerful of warm water, to be used with nasal douche twice daily.

In otorrhea: R—Zinci sulph., grs. v; acid car-

bol., grs. v; aq. ad. ℥j. Sig.—To be used with an equal quantity of warm water, a little squeezed from cotton wool into the ear five or six times daily. This may be advantageously followed by R—Thymol, grs. iij; spts. vin. rect., ℥vj; aq., ℥iij, fiat lotio. Sig.—To be used in the same manner. In all cases of pain in the ear, as well as ordinary earache, the following will almost invariably give relief: R—Plumbi acetat., grs. iij; tinct. opii, ℥ij; glycerine, ℥iij; aq. ad., ℥iij. Sig.—To be warmed and a little dropped or squeezed from cotton wool into the ear.

In chronic eczema of the external meatus, the following ointment is found most beneficial: R—Liq. carbonis detergens ℥x; liq. calcis, ℥xx; ungt. hyd. nit. dil., grs. xx; ungt. zinci. ad., ℥j; ft. ungt. Sig.—To be applied with a brush three times daily.

In chronic non-suppurative catarrh of ear, the following inhalation is very effective: R—Tinct. iodi, ether acetic, āā ℥j. Sig.—Twenty drops in a pint of hot water (about 150° F.), for inhalation two or three times a day by the Valsalvan method.

CANADIAN.

OUR NEW YORK LETTER.

From our Own Correspondent.

NEW YORK, Feb. 18th, 1888.

Cocaine, as a local anesthetic is used of course largely by the eye, nose and throat specialists, but Dr. Wyeth, Professor of Surgery at the N. Y. Polyclinic, is very enthusiastic as to its value in minor and genito-urinary surgery, and uses it extensively in his clinics, where it certainly does give splendid satisfaction.

A doctor attending the Polyclinic, had on his left thigh, in the gluteal region, a lipoma of the size of a large goose-egg. Dr. Wyeth removed the tumor, using cocaine as an anesthetic. Along the proposed line of incision, say three inches or more, he injected a 4 per cent. solution of cocaine, introducing the needle and injecting a few minims, withdrawing it a little and injecting a few more, and so along the line. In all he injected about two grains. While dissecting out the tumor he injected in the tissues a few minims on the slightest pain being felt by the patient, so that the removal of the whole tumor caused the patient no

pain whatever. The wound was sewed up, dressed antiseptically, and the patient dressed and went about his work, feeling no discomfort from the operation. The only pain felt at all was that caused by the hypodermic puncture. Of course the whole of the cocaine was not absorbed, as the greater portion was washed away by the blood and irrigation when the incision was made. Three grains injected at once into the circulation will cause no bad symptoms, and Dr. W. A. Hammond says he injected into his own circulation at one injection 18 grains; symptoms of intoxication ensuing, but nothing alarming. Dr. Wyeth advises that when much cocaine is used, it be let into the general circulation gradually; for instance, if operating where a tourniquet is employed, to loosen the tourniquet every now and then and allow the cocaine to gradually enter the circulation, and no bad symptoms will ensue.

In performing internal urethrotomy, his mode of procedure is about as follows. The day previous to operation, he gives the patient oleum gaultheria to sterilize the urine, a property which this drug seems to possess, and by this means urethral fever is prevented. At the time of the operation the stricture is localized by means of an exploring bougie, consisting of a long flexible shaft of about $\frac{1}{8}$ inch in diameter, and having a bulbous extremity, in which the shoulders of the bulb come off at right angles to the shaft, a modification of the olive-shaped bulb. The bulbous portion is graduated in scales of $\frac{1}{16}$ th of an inch. Introducing the bougie it passes readily till the stricture is reached, and passing it through the stricture, its withdrawal is attempted when a decided resistance to the shoulders of the bougie indicates the end of the stricture nearest the bladder. Then making a slight bend in the shaft at the meatus, the bougie is withdrawn, and as it leaves the stricture the sense of resistance is lost. Another bend in the shaft at the meatus is made. The length of stricture is indicated by the distance between the two "bends," and the distance the stricture is from the meatus also indicated. Then by means of a long urethral syringe a 4 per cent. solution of cocaine is injected and kept there for a few minutes. A Wyeth's modification of this urethrotome is used, and the length of the stricture and its exact location being known, the stricture is divided from behind forward.

In over a dozen cases which I have seen done in this way the patients were entirely unconscious of any pain during the operation, and some of them did not know their strictures had been divided until told so after leaving the table. Dilatation is kept up by the daily passage of sounds for some time, and patients instructed to have a sound passed at occasional intervals for a long period.

Cocaine is used in operations for fistula in ano, hemorrhoids, abscesses, felons, and all such minor operations.

Iodide of potassium is given in large doses in cases of syphilis—particularly in cerebral syphilis. Dr. W. A. Hammond, of the *Post-Graduate*, gave the following as his method of administering this drug in a case of cerebral syphilis where the pain was excessive and continuous. Commence with 25 gtt. of a saturated solution equivalent to 25 grains, t. i. d. in water, and on a full stomach. He increases the dose by three drops a day until an effect is produced, going as high as 200 gtt. t. i. d. if necessary. As the dose is increased, so increase the amount of water, using, say with 200 grains a pint and a half of water, and sipping it. If no effect is produced by a 200 grain dose, stop, as the probability is that the pot. iodid. will have no effect. If, however, 200 grains does produce some effect, go, if necessary, to as much as $\bar{3}$ j doses three times a day. Such large doses would be necessary only in very intractable cases. But $\bar{3}$ j and $\bar{3}$ iss doses are frequently prescribed and the patients appear to grow fat under the influence of the drug, nor are symptoms of iodism usually produced.

CANUCK.

Selected Articles.

TREATMENT OF TYPHOID FEVER IN THE PHILADELPHIA HOSPITALS.

PENNSYLVANIA HOSPITAL.

Dr. Da Costa does not accept any specific plan of treatment, although he generally administers the mineral acids; of these he most often prescribes nitromuriatic acid, twenty drops of the dilute acid every fourth hour. He does not interfere with the action of the bowels, unless the discharges exceed three, when he is most apt to order opium, in the shape of suppository.

He insists upon the patient being fed with liquid food every two hours during the day-time,

but not quite so often at night. He generally begins with stimulants in the second week of the disease, taking as his guide the state of the first sound of the heart. Rarely, however, does he give more than from eight to ten ounces of whiskey in twenty-four hours.

The patient is sponged with cool water twice daily, oftener if the temperature exceed 103°. Under these circumstances, too, an occasional decided dose of quinine, or antipyrine is resorted to, particularly if the high temperature be in the morning or show signs of persistency. He is an advocate of being very watchful for complications, and for their early treatment. Late in the fever and during convalescence he generally directs quinine.

PHILADELPHIA HOSPITAL.

Dr. Tyson's treatment of typhoid fever is mainly a symptomatic one. Placing the patient upon a milk diet from the outset, and continuing it until convalescence is established, symptoms are treated as they arise. Diarrhea is preferably controlled by nitrate of silver and the extract of opium, one-quarter grain of each three or four times a day. In more obstinate cases of diarrhea where this treatment fails, although seldom necessary, the more powerful astringent, acetate of lead, and more rarely tannin, is substituted for the nitrate of silver. Abdominal pain and tenderness are treated with poultices in addition to opium.

High temperature (104° to 105°) is combated by sponging the body. Persistent temperature above 105° is treated by wrapping the trunk with cloths wrung out in iced water, which are renewed every hour or half hour, and even oftener if necessary, the temperature under these circumstances being taken hourly. Quinine is given in almost every case, not as an antipyretic, but as a tonic and stimulant, in doses of from six to sixteen grains daily. The stage of dry tongue is treated with turpentine in doses of ten drops every three hours.

Alcoholic stimulants are used in almost every case as required: moderately in mild cases, and in full doses in severe cases, frequently half an ounce every two hours. Sometimes larger doses are given. *Very high temperatures are regarded as demanding the fullest stimulation.* Dr. Tyson has used largely the modern antipyretics, thallin, antipyrin, and antifebrin, but considers them inferior to the iced cloths. Of these antipyretics, however, he prefers antifebrin as less alarming in its effects, and equally efficient with the others in reducing temperature.

Dr. E. T. Bruen conducts his treatment without reference to the administration of specifics. During the first few days, especially in the fall of the year, when malarial influences prevail, it is customary to give for one or two days full doses of quinine for diagnostic purposes. If the continued nature of the fever is demonstrated, an expectant plan of

treatment is inaugurated, which in mild cases is continued throughout the course of the disease till its termination.

If the temperature exceeds 104°, sponging with cool or cold water is the means usually adopted. The sponging must be repeated every few hours. Sometimes cold water in rubber bags is applied to the back of the head and abdomen. The cold bath is reserved for those exceptional cases in which the high temperature seems to be influencing the nervous centres. The cold water bath he believes can be employed in the early stages of the fever with more safety than later on, since the vasomotor centres are much more responsive, and dangerous congestions of the viscera are avoided. The administration of antipyretics, such as antipyrin or antifebrin, so useful in the zymotic fevers of childhood or in the hectic of consumption, is to be avoided in typhoid fever for fear of disturbing the activity of the stomach. When the typhoid state is marked, associated with high temperature, the occasional use of antifebrin, in five-grain doses, is desirable and preferable to the cold bath. But persistent systematic sponging of the surface of the body in the usual order is the safest and best means in his hands of reducing temperature in typhoid fever. Quinine is employed in tonic doses, but not as an antipyretic.

Great stress is laid upon the administration of nourishment. From four to six ounces of milk should be given every two hours for eighteen hours out of the twenty-four. An interval of five hours once in the twenty-four should be secured to foster the digestive powers. Care should be taken to prevent the coagulation of the casein by dilution with Apollinaris or lime water; one or two raw eggs may be administered every other day. This method of diet is relied upon till convalescence is inaugurated, when the beef broths, prepared with some cereal, are allowed. The importance of delaying the use of meats until the temperature has been quite normal for more than a week, cannot be overestimated, and the first solid diet permitted to convalescents is farinaceous in character.

When diarrhea manifests itself, nitrate of silver in $\frac{1}{8}$ th grain doses with $\frac{1}{2}$ th of ext. opium is given every four hours, with opium suppositories, if necessary, in addition. In the majority of cases this is sufficient; but acetate of lead is resorted to in case of failure. Turpentine in emulsion (with muriatic acid in cases in which silver is not used) is always employed as soon as the typhoid state begins. The general stimulative properties of turpentine, aside from its local effects, render it invaluable in a majority of cases. Constipation of the bowels must be avoided, and every other day at least the bowels should be moved. Enemata, carefully given, seem to him the best mode of securing the desired end.

Internal congestions are antagonized by chang-

ing the position of the patient, by turpentine stupes, and by cupping the chest when the lungs are the organs involved. A cotton jacket neatly made and applied, is very useful under these circumstances. Hemorrhages from the bowels are treated with opium and acetate of lead. In order to stimulate the circulation, whiskey is given early in the history of those cases in which high temperature marks the reception of a full supply of the typhoid poison, and the advent of the initial symptoms of the typhoid state are carefully looked for even in those patients in whom the mild character of the symptoms does not seem to call for stimulation. Those patients who have been habitual free consumers of alcohol require the largest amounts of this drug during typhoid fever. It is important, whenever practicable, to suspend the medicine, as well as the food, for one five-hour interval in the twenty-four in order to avoid overtaxing the stomach.

EPISCOPAL HOSPITAL.

Dr. Frederick P. Henry, in treating the cases in his wards, seeks to control diarrhœa and allay its attendant peristalsis; to subdue nervous excitement, and to keep the temperature within moderate bounds. To accomplish these ends, the nutrition, stimulation, and medication of the patient receive the most careful attention. While the fever lasts, the diet is altogether liquid, and consists of milk with lime water, and animal broths. In giving these substances he endeavors to proportion their amount to the patient's digestive powers, for, to quote the language of Collie, without fully accepting it, "pints of milk and eggs in the stomach or bowels undigested are about as useful there as a cannon ball." When convalescence begins and farinaceous foods are first administered, a slight rise of temperature is the rule. This does not contra-indicate their continued employment, but may be regarded as physiological.

Stimulants are not given as a matter of routine, but only *pro re nata*. It is seldom that more than six ounces of whiskey are given *per diem*, and a certain number of mild cases receive no alcohol whatever. When diarrhœa is obstinate, port wine is substituted for whiskey. Heroic measures have never been in vogue at this hospital, and, therefore, an attitude of "masterly inactivity" was preserved during the period of the cold bath craze. A more gradual, and, therefore, a more physiological effect, certainly one more soothing to the nervous system, is obtained by repeated sponging with tepid water. The latter method may be compared to a hint; the former to a denial, and in dealing with men's bodies as with their minds, suggestion, so to speak, is better than contradiction.

Some ten years ago, quinine was given in large amount—gr. xv to xx in the course of an hour—for its antipyretic effect, but this method was soon abandoned, and for several years the doses of this

drug have not exceeded gr. xij *per diem*. To this extent it has been, until quite recently, administered as a matter of routine. Antipyrin and antifebrin have been thoroughly tested, and the opinion with reference to them is that they should be used with caution and reserved for emergencies of hyperpyrexia. The rapid descent of temperature produced by these remarkable agents has been, in rare instances, attended with a somewhat alarming condition of collapse. Fifteen grains of antipyrin given in three doses in the course of a half hour are, as a rule, sufficient to produce a decided effect, and Dr. Henry possesses a temperature chart, which shows that, on several occasions, five grains of antifebrin have caused a defervescence of from 4.5° to 5° F. In another chart a fall of nearly 6° (from 103.6° to 98°) was affected by the same dose. A decided impression upon the temperature has often been made by doses of 2.5 grains.

The benefits to be derived from turpentine are problematical, which is not to be wondered at, when it is recalled that the gastric mucosa is always in a hyperemic or catarrhal condition, and has been more than once observed to be the seat of the specific typhoid deposit and ulceration. Accordingly this drug is but little used. Opium suppositories are mainly relied on to check excessive diarrhœa and allay peristalsis, and, when they prove insufficient, astringents, such as acetate of lead and gallic acid, are given *per os*; a moderate diarrhœa is never interfered with. By moderate, as here employed, is understood from three to six gruel or mush-like evacuations in the twenty-four hours. The same drugs that are used to control diarrhœa are, with the addition of ergot administered in case of intestinal hemorrhage. When tympany is great, powdered charcoal and enemata of tepid water have been found of decided benefit.

The treatment outlined above may be described as symptomatic and expectant. It is, in no sense of the word, specific. The latter adjective may be applied, with propriety, to measures which have as their object, the shortening of the course of the disease, or the mitigation of its severity, and which are addressed to the specific intestinal lesions. Such measures have not been neglected in the Episcopal Hospital. Nitrate of silver, carbolic acid and iodine, and Labarraque's solution have been systematically tested, but Dr. Henry believes them to be, one and all, inferior to thymol. He has given his experience with this drug in a recent contribution to the *Medical News* (Sept. 3, 1887), to which the reader is referred, and, since that time, he has received confirmation of his statements from several sources. "The favorable effect of the drug was evinced by a steady descent of the temperature, by a gradual diminution in the daily number of stools, by the absence of mental excitement, and, most conspicuously, by

the clean, moist tongue presented in every instance. . . . I have always prescribed the thymol in pill, of which the best excipient is medicinal soap, and, so far, have not given more than thirty grains in twenty-four hours, two $2\frac{1}{2}$ grain pills every four hours. This is a small dose, but I have seen no reason to increase it. This may be done, however, with perfect safety, and, perhaps, with still better results."

Quite as good results have been claimed for naphthalin, but, so far as he knows, it has not been used in the Episcopal Hospital, and, other things being equal, the comparative innocuousness of thymol should entitle it to the preference.

HOSPITAL OF THE UNIVERSITY OF PENNSYLVANIA.

Dr. Pepper holds that there is no disease more influenced than this in its later course and result by the management of its initial period. Whenever there is the least suspicion that typhoid fever is beginning the patient should have the benefit of the doubt, and from that moment should be treated with strict thoroughness. Sometimes this will induce abortion of the case, for it is one of the diseases which is, so to speak, self-perpetuating, owing to the continual development of the materies morbi in the intestinal canal so long as the contents afford a suitable culture medium.

This condition is much affected by the diet, and by agents which influence the lesions of the intestinal glands. It is well to repeat that from the earliest moment we must insist on absolute rest. Much harm is done by postponing for two or three days the necessary confinement to bed. So should an absolute restriction of diet be imposed at once. It seems to Dr. Pepper that the intestinal canal is kept in the best condition when from the earliest hour the diet has consisted exclusively of milk, light gruels or broths, and pure water. Milk may seem to disagree, but it will then usually be found that it has been given in too large amounts or at too short intervals or that to enable it to be digested it must be diluted or peptonized. For patients with typhoid fever must be fed, not on theory, but according to the observed effects of the food given. Tympany and diarrhea are often the result of excessive or improper feeding, although more commonly they may be caused by the enfeebled state of the muscles of the intestinal and abdominal walls, and by the lesions of the mucous membrane. Under the influence of the unqualified dictum that fevers should be fed, a dictum much more universally applicable to typhus than to typhoid fever, many cases of the latter are injured by injudicious feeding. Not only may tympany and diarrhea be promoted thereby, but the accumulation of imperfectly digested organic matter in the bowels may favor the multiplication of the specific materies morbi, and also the development of ptomaines. This question of feeding is, therefore, the funda-

mental one in typhoid fever, and should be treated with caution and minute attention in each case.

Next in importance seems the administration of some remedy directed to the invariably present lesion of the intestinal glands. Drugs which exert a sedative astringent effect, which do not hurt the stomach, and which are antiseptic either directly or by their action on albuminoids, would seem to be indicated; and Dr. Pepper thinks that some such remedy should form a part of our treatment of every case of typhoid fever, from the earliest hour when we suspect the nature of the case. Creasote, carbolic acid, iodoform, mineral acids, especially muriatic and sulphurous, and nitrate of silver, suggest themselves. In the great majority of cases he much prefers nitrate of silver, and since he revived the use of the remedy in typhoid fever it has been employed so extensively and with such admirable results as to have established its value. It is given from the outset in doses of gr. $\frac{1}{2}$ to gr. $\frac{1}{4}$ thrice daily, combined with small amounts of opium, or belladonna, or nux vomica, according to special indications. He has come to believe that the appearance of dangerous symptoms is rendered less frequent, and the entire course of the disease rendered more favorable by the early use of this remedy in conjunction with an early insistence on absolute rest and carefully adjusted feeding.

When the typhoid symptoms become pronounced, especially the dry, brown, tremulous tongue with weak heart, and paretic tympany, he substitutes, or adds, turpentine. When the tongue remains moist but is flabby and white coated, the bowels torpid, and the secretions scanty, the mineral acids with strychnia in solution seem indicated.

Space forbids mention of the obvious indications in certain cases for other remedies of this group. Alcohol is required sooner or later in most cases of typhoid fever, yet he never prescribes it except when definite indications call for it. These indications are sought in the character of the cardiac action, of the nervous symptoms, of the digestion, and of the pyrexia. By withholding it until called for, and then giving it in small doses, and by cautiously increasing the dose and strength of the preparation used, we secure all possible benefit, and avoid the harm which follows here, as elsewhere, its excessive or untimely use.

Nearly always also there arises in the course of typhoid fever the necessity of controlling the pyrexia. But this necessity will be less frequent in proportion as the elements of treatment already insisted on are early and thoroughly attended to. So long as the temperature remains reasonably low, $102\frac{1}{2}^{\circ}$ to 103° , and no nervous or cardiac symptoms appear attributable to the mere pyrexia, we need pay no special attention to it. But at any time, even during the earliest days, the fever may reach a point requiring interference. If

quinine has been given in moderate doses, as is often the case, one or two full doses are now used, but recent experience had led to a preference for antipyrin when only an occasional antipyretic effect is required, or to the external use of cold water by sponging or affusion when the tendency to hyperpyrexia shows more obstinacy.

Dr. Osler believes a plan of armed expectancy to be, in the present state of our knowledge, the most rational. The majority of the cases require little or no medicinal treatment. The routine of a restricted diet under the watchful care of an intelligent nurse, meets the *indicatio morbi*. No initial purge is given, as the cases are never brought to hospital very early, and constipation is not dreaded. An acid mixture is sometimes ordered, or dilute hydrochloric acid is added to the water, which is given freely. As it is possible that the defective elimination of the products of regressive tissues changes may be, in part at least, the cause of the so-called typhoid symptoms, every effort is made to keep active the skin and kidneys. Repeated spongings and an abundance of fresh cool water to drink, answer the purpose.

A milk diet is ordered—about three pints in the twenty-four hours. Very exceptionally it has to be artificially prepared. An examination of the stools will often indicate if too much milk is taken, or if it is not digested. Warm milk is less apt to produce flatulence. Broths and beaten-up eggs are allowed in mild cases.

When the fever reaches 103°-104°, the spongings are more frequently used. If it rises higher—104°-105°—the wet pack is ordered, or a dose of antipyrin or antifebrin, either of which acts promptly. The cold-water treatment is specially indicated in those cases with profoundly ataxic symptoms, though all the features in this state are not due to the pyrexia. For diarrhea, when excessive, aromatic sulphuric acid, bismuth, or naphthalin is ordered. For tympanites, turpentine stupes, turpentine internally, creasote, or naphthalin. Constipation is disregarded unless it persists longer than seven or eight days, when a saline purge or an enema is ordered. The severe headache of the early stage may demand leeches. Bromide or chloral will usually overcome the troublesome insomnia of certain cases.

When there are indications of heart failure, alcohol is given, and, if necessary, in large doses. Camphor, strychnine, and ergot supplement, but cannot replace, alcohol in this condition. Should hemorrhage occur, opium is given and an ice-bag placed on the abdomen.

A return to ordinary diet is permitted ten or twelve days after convalescence is established.

JEFFERSON MEDICAL COLLEGE HOSPITAL.

Dr. J. C. Wilson treats his cases of enteric fever by the systematic use of laxative doses of calomel

during the first ten days, and by carbolized iodine, as originally suggested by Professor Bartholow, throughout the course of the disease. The most careful attention is given to the details of nursing, dietetics, and hygiene, and symptoms are treated as they become prominent. Due regard being had to the peculiarities of individual cases, the general plan is as follows:

Upon the evening of admission the patient receives seven and a half to ten grains of calomel in combination with ten grains of sodium bicarbonate, at a single dose. If the case be still in the first week, which is not usual with hospital patients, this dose is repeated every second night until its third administration; if already in the second week, a single dose only is given. After the tenth day it is given cautiously or omitted altogether. If there be constipation, the first dose of calomel is followed by two or three large stools mostly of the consistency of mush, the later doses by stools decidedly liquid. Diarrhea is not regarded as a contra-indication. On the contrary, it almost always becomes less troublesome after the action of the mercurial. During the subsequent course of the disease, constipation is not allowed to continue at any time beyond the third day; but is relieved as a rule by an eight ounce enema of warm, thin gruel, slowly injected, or exceptionally by a five, or seven and a half grain dose of calomel; the choice being influenced by the character and prominence of abdominal symptoms. Under this plan of treatment diarrhea is not commonly excessive. When necessary, it is treated by one grain suppositories of the aqueous extract of opium.

From the beginning the patient receives at intervals of two hours during the day, and three hours during the night, and immediately after the administration of nourishment, two or three drops of a mixture of two parts tincture of iodine and one part pure liquid carbolic acid. This dose is administered in an ounce of iced water. Unless the temperature exceeds 104° F., the fever calls for no special treatment, beyond cold sponging, which is practised in every case at least twice in the twenty-four hours. A higher temperature receives prompt attention. After trial of the list of new antipyretics, the choice is antipyrin. It is used in single doses of ten to fifteen grains, and repeated when the temperature again rises beyond 104° F. If this remedy fails of its effect, large compresses of several thicknesses extending across the chest and abdomen from the neck to the pubes, and freely wet with iced water, are used. The gradually cooled bath is held in reserve.

Alcohol has no necessary part in the routine treatment of enteric fever. Many cases do not require it; some are unquestionably benefitted by it; while to a considerable proportion it is an absolute necessity. Dr. Wilson believes that the

employment of alcohol in the treatment of fevers should be regarded not as a dietetic but invariably as a medicinal measure.

Space does not permit the discussion of the treatment of complications, nor of the management of convalescence. If perforation occurs during or after the period of defervescence, namely, in the fourth week or later, laparotomy should be performed.—*Med. News.*

SOME LABORATORY NOTES ON PAPOID DIGESTION.

For some time it has been known that the stems, leaves and unripe fruit of a plant called *Carica papaya* contain a ferment capable of digesting proteids. This plant is found in the East and West Indies and in South America. The natives of many localities where this plant is indigenous make a practice of rolling their fresh meat in caraca leaves to make it tender and easier of digestion. From the juice of this plant Dr. Finkler, of Bonn University, has made an albuminoid preparation containing the ferment, which is now attracting much attention under the name of Papoid.

Wurtz, however, was the first to isolate the ferment, to which he gave the name of *papain*, and ascribed to it certain definite and characteristic reactions. About 90 per cent. of commercial papoid is soluble in water; the residue consists chiefly of coagulated albumen. The solution contains globulin, but it is highly probable that the ferment is quite independent of this albuminoid, as the globulin may be precipitated, leaving in the solution a large part, if not all, of the ferment. As papoid contains the ferment papain and also some albumen on which it may act, care must be taken to keep it dry. The unsatisfactory results obtained by some in its use are no doubt due to previous exposure of the sample to moisture. A solution of papoid will always give the peptone reaction on standing a few hours.

The greatest differences of opinion have been expressed by different experimenters as to the conditions most favorable to the activity of papoid. Albrecht (*Schmidt's Jhrbuch*, Bd. 190) states that papain digestion is hastened by the presence of hydrochloric acid. Wurtz, on the other hand shows that papain digestion is essentially a neutral one, which is most rapid and thorough at a temperature of about 40°. Rossbach has recorded a few experiments—at variance with most others—in which he claims that this ferment is not more active in a warm solution than in a cold one. As papain is a vegetable product, this seems highly probable, but the careful experiments of Dr. Sidney Martin fully prove that a moderate degree of heat increases the activity of this ferment just as it

does that of any other. The fact remains, however, that papain has powerful digesting action at at ordinary temperatures—50°–70°F. Dr. Martin has published, at some length, a series of carefully made experiments on the nature and action of papain in the *Journal of Physiology*, Vols. V. and VI, and the results of the following experiments, where they run parallel with his, closely correspond with the results obtained by this author.

In each of the following experiments the digestion mixture consisted of 1 gramme of pure dry fibrin in powder, which was boiled in 20 cc. of water and allowed to stand for 12 hours to soften. To this was added 10 cc. of a 1 per cent. solution of the ferment to be used, and standard acid or alkali to required strength, making the whole mixture up to 50 cc. The digestions were carried on in an incubator kept at a constant temperature of 37–38°C., and at the end of a variable time the undissolved fibrin was filtered off on a small, tared filter, and after thorough washing was dried at 100° to constant weight. Thus the undigested fibrin could be weighed in the same condition as before it was submitted to the action of the ferment, and any experimental error caused by the presence of a variable quantity of moisture was eliminated. It is not easy to understand how relative digestion can be accurately determined by those who experiment with proteids of such indefinite and variable composition as “hard-boiled egg,” “fresh meat,” and “freshly coagulated albumen”; yet many of the published results on papoid digestion have been based on experiments in which their substances were weighed before and after the action of the ferment.

EXPERIMENT I.—Digestion mixture consisted of 1 gramme fibrin, 10 cc. of a 1 per cent. solution of papoid or pepsin in a neutral medium; time 20 hours; temperature 37–38°C. Experiment done in duplicate:

	Undigested fibrin.	Per cent. digested.
Papoid (a).....	.187 grm.	81.3 per cent.
Papoid (b).....	.13 “	87.0 “
Pepsin (a).....	.903 “	9.7 “
Pepsin (b).....	.883 “	11.7 “

EXPERIMENT II.—Conditions the same as in I, but in an acid medium of .3 per cent. hydrochloric acid; time 20 hours; temperature 37–38°C.:

	Undigested fibrin.	Per cent. digested.
Papoid (a).....	.972 grm.	2.8 per cent.
Papoid (b).....	.923 “	7.7 “
Pepsin (a).....	.08 “	92.0 “
Pepsin (b).....	.04 “	96.0 “

EXPERIMENT III.—Pepsin in .3 per cent. hydrochloric acid and papoid in a neutral medium; other conditions as before; time 15 hours:

	Undigested fibrin.	Per cent. digested.
Papoid (a).....	.378 grm.	62.2 per cent.
Papoid (b).....	.322 “	67.8 “
Pepsin (a).....	.232 “	76.8 “
Pepsin (b).....	.281 “	71.9 “

EXPERIMENT IV.—Papoid and pancreatin in 1 per

cent. solution of sodium carbonate; other conditions as before; time 18 hours:

	Undigested fibrin.	Per cent. digested.
Papoid.....	.37 grm.	63 per cent.
Pancreatin.....	.02 "	98 "

EXPERIMENT V.—Papoid in .2 per cent. solution of sodium carbonate and pancreatin in a 1 per cent. solution; other conditions as in Experiment I; time 20 hours:

	Undigested fibrin.	Per cent. digested.
Papoid.....	.131 grm.	86.9 per cent.
Pancreatin.....	.122 "	87.8 "

EXPERIMENT VI.—In order to determine the conditions under which papoid is most active, its action on 1 grm. of fibrin in the presence of different quantities of alkali was estimated with the following result; time 18 hours:

	Undigested fibrin.	Per cent. digested.
Papoid + 1 per ct. Na ₂ CO ₃44 grm.	56 per cent.
+ 5 ".....	.28 "	72 "
+ 2 ".....	.12 "	88 "
in neutral solution.....	.18 "	82 "
In 3 p.c. hydrochloric acid....	.96 "	4 "

EXPERIMENT VII.—The action of papoid in neutral solution on diphtheritic membrane compared with that of pepsin:

- (a) Papoid digested completely .3 grm. of diphtheritic membrane in 20 hours.
Pepsin had only partially dissolved the same weight of membrane at the end of 36 hours.
- (b) Papoid dissolved completely 5 grm. of membrane in 23-24 hours.

In these experiments a 5 per cent. solution of papoid or of pepsin was added to the undivided membrane, and the whole kept wet during the time specified. The membrane was reduced to a clear fluid jelly by papoid, but only partially attacked by the pepsin under the same conditions.

EXPERIMENT VIII.—Does acid destroy the proteolytic action of papoid as it does that of trypsin?

To ascertain this, .2 grm. of papoid was added to 1 gramme of fibrin in a .3 per cent. solution of hydrochloric acid in duplicate. Both mixtures were made up to 50 cc. and left in the incubator for three hours. At that time one mixture was estimated and the other made faintly alkaline with sodium carbonate and left in the incubator for 13 hours longer. The acid mixture showed no digestion,—no reaction indicating peptones could be obtained. At the end of 13 hours the other mixture gave a residue of .23 grm., showing that 77 per cent. had been digested. The proteolytic ferment of papoid is therefore not destroyed by being kept in an acid medium for three hours at blood heat; its action is only suspended. The conclusions to be drawn from these experiments are obvious. Papoid evidently contains a powerful proteolytic ferment which resembles trypsin both in the conditions under which it is most active and in its mode of digestion. It corrodes the

fibrin, dissolving each piece away from the surface to the centre, does not gelatinize the whole mass like pepsin. Moreover, one can readily obtain leucin in the products of digestion. Trypsin could not be obtained by the writer, but its presence was determined by Dr. Martin, who worked with larger digestion mixtures. Papoid, as shown in Experiment II, is quite inactive in small quantities in an acid medium of .3 per cent. hydrochloric acid. A certain amount—3 to 7 per cent. of the fibrin—was dissolved by it, but no true digestion occurred, as peptones in any quantity were absent. The results of Experiment VIII, however, show that although it is inactive in acid its functions are only suspended, the ferment is not killed. This is interesting, in view of the frequent use of papoid for treatment of dyspepsia. If the stomach be normally acid, its activity will probably be suspended entirely; if, however, the acidity be very slight, papoid will probably act. Its greatest action, however, takes place in the small intestines, where the medium is alkaline or neutral. The ferment is most energetic in a faintly alkaline medium, about .2 per cent. of sodium carbonate.

Comparing its digestive power with that of pepsin and pancreatin, Experiment I shows that in a neutral medium its activity is far greater than pepsin, but it is inferior to it in an acid medium. Under the conditions that have been found to be most favorable to their respective functional activity, papoid is but little, if at all, inferior to either pepsin or pancreatin.

Papoid is especially useful for the removal of diphtheritic membrane. The conditions present in the pharynx are just those which retard the action of pepsin and pancreatin, but do not influence papoid. The medium in which it is required to act is practically a neutral one and the temperature low, there is present, besides, a large excess of the products of digestion which does not affect papoid—indeed it is most energetic in a concentrated medium. Moreover, papoid has been shown clinically to lessen very greatly the disagreeable fetor of the disease. Painting on a 5 per cent. solution, freshly made, every two or three hours has been found to give the best results; the fetor disappears in a few hours and the membrane in from 12-18 hours becomes thin and glairy. It would seem to be especially indicated in those forms of dyspepsia in which peptic digestion is greatly impaired and where the secretion of gastric juice is very weak. Papoid, therefore, promises to be a powerful auxiliary in combating those great diseases—diphtheria and dyspepsia.—R. F. Ruttan, M.D., in *Can. Med. and Surg. Jour.*

DR. LAUDER BRUNTON finds that small doses of strychnia are very useful in neurasthenic insomnia.

MEDICAL NOTES.

Dr. Parvin considers iodine one of the best *uterine hemostatics* and antiseptics.

Professor Parvin uses this efficient formula for *carcinoma* :—

R.—Iodinii, ʒj.
Brominii, ʒij.
Acid. carbolic, ʒiv.
Alcohol, fʒviii. M.

Sig.—Apply, and then introduce a saturated solution of bicarbonate of sodium.

At a recent clinic, Prof. Holland recommended the following as an efficient *depilatory stick* :—

R.—Cerae flavæ, ʒij.
Shellac, ʒss.
Resin, ʒiv.
Picis Burgund., ʒx.
Gum damar., ʒiss. M.

Heat ; before cold, roll into sticks.

Statistics show that 30 per cent. of cases of *wounds of the abdomen* recover under antiseptic treatment when the cavity is opened for diagnostic purposes and treatment. The mortality of maternity wards in hospitals has been reduced from 15 per cent. to $\frac{1}{2}$ per cent. under antiseptic precautions.

The following used through the nostrils has a high repute for *asthma* :—

R.—Menthol, ʒj.
Cerat., ʒij.
Ol. amyg. dulc., ʒj.
Zinci oxidi, ʒj.
Acidi carbolic, ʒss. M.

Sig.—Apply every few hours.

Dr. Horwitz, chief assistant to the surgical department of Jefferson Hospital, frequently uses the following as a favorite prescription for *injection in gonorrhœa* :—

R.—Plumbi acetatis, ʒss.
Zinci sulphat, gr. xvj.
Extract. krameriaæ fluid., . . . fʒij.
Tinct. opii, fʒss.
Aqua, q. s. ad., fʒvj. M.

Sig.—Give as injection.

The source of *albumen in the urine* of some pregnant women, says Professor Parvin, is probably a discharge, as leucorrhœa or cystitis, being washed out of the vagina when urinating ; therefore, it is much better to use a catheter, or have the vagina thoroughly washed out before collecting the urine.

Professor Bartholow considers the most effective treatment for *chronic neuritis* is galvanism and morphine hypodermatically. Place the positive pole to the affected part and negative to the peri-

phery. Repeat this treatment daily for a few minutes at a time. For very obstinate cases, use flying blisters locally, and internally iodides of potassium and colchicum.

The great secret of applying *plaster-of-Paris bandages* is to have all the sizing out of the material used, so when a piece of muslin to be used is thrown upon water it sinks readily ; if it does this it will readily absorb water and plaster and will set quickly ; a little salt added to the water is an advantage ; a roller made of lint is better than cotton to be applied next to the part. (Dr. Allis.)

Prof Parvin says the term *placental soufflé* is still used improperly by many physicians instead of uterine soufflé, the correct designation ; that the placenta is not concerned in the sound is proved by the fact that the soufflé is heard some days after confinement, and has been heard in uterine fibroids. The sound is synchronous with the pulse of the mother, and of very little value as a sign of pregnancy.

Professor Parvin advises that *prolapse of the vagina* be treated by astringent injections, having the bladder frequently emptied, especially if a cystocele is associated with the prolapse, which is frequently the case, and apply a suitable elastic ring pessary ; if the pessary is uncomfortable or cannot be worn, a large tampon of absorbent wool, dipped in a solution of tannin and glycerin, introduced in the morning and removed at night, may suffice.

For a case of *simple goitre* of six months' standing, Prof. Da Costa prescribed liq. iodinii comp., gtt. iij, three times a day, gradually increased to ten or fifteen drops three times a day. Locally :

R.—Iodinii, ʒss.
Lanoline, ʒvj.
Ung. zinc. oxid., ʒij.
Ol. bergamot, gtt.v. M.

Sig.—Rub over gland twice a day.

In *exophthalmic goitre* a murmur is heard over thyroid gland ; in simple goitre murmur is absent.

Dr. Allis has devised a very ingenious drainage tube for *draining the thoracic cavity*. It is made by taking a piece of ordinary rubber tubing of proper size, quartering lengthwise about one inch, passing the divided portion through a piece of adhesive plaster previously perforated the size of tubing, and turning the cut ends down and securing them by another similar piece of plaster, the two adhesive surfaces approximating. When the tubing is inserted it is even with the surface of the body and kept there by the plaster, not inconveniencing the patient in any degree, who can move without danger of displacement. This simple contrivance is easily made, and has been used with satisfaction in the wards of Jefferson College Hospital.—*Col. and Clin. Rec.*

ACTION OF ANTIPYRINE.

TINEA DECALVANS A NERVOUS DISEASE.

At the meeting of the Academy of Medicine, last week, Dr. A. Robin, the newly elected member, read a paper on the action of antipyrine on nutrition. The paper contained a continuation of the researches he had undertaken in 1885 and in 1886. The deductions from these researches may be summarized as follows: 1. Antipyrine first acts on the nervous system, the excitability of which it moderates, not in a purely dynamical manner, but in acting on its elementary nutrition. 2. It diminishes the organic disintegration, and still more lowers the organic oxidations, whence the production of an excess relative to the lithic acid and of the nitrogenous extractive materials, which are less soluble, and consequently with more difficulty eliminated than urea. It is probable that this influence on the general nutrition is the immediate consequence of the effects of antipyrine on the nervous system, as almost all depressing medications of the nervous activity act in nearly the same manner. 3. Antipyrine possesses also an antiseptic property very marked, even at a feeble dose, and which appears to be as manifest in the organism, and without any injury to it, as in the experiments of the laboratory. The author further observes that these three propositions indicate what should be the applications of antipyrine. It acts against pain, against painful cardiopathies and agina pectoris. As regards its administration in the treatment of fevers, Dr. Robin considers it very much compromised, as its beneficial action in these cases is very doubtful. Thus, for instance, while endeavoring to diminish disintegration, we must do everything to favor the oxidation of the disintegrated products, because the oxidations give birth to soluble residues. As antipyrine does not fulfil this indication, it should not be employed in this or any other fever. From these considerations, and from its special action on the element pain, Dr. Robin suggests that the substance now known by the name of antipyrine would be more correctly termed "analgesine," or "neurasthenine." Professor Verneuil observed that he had been rather successful in the treatment of surgical septicemic fevers by antipyrine, which Dr. Robin, however, considers a corroboration of his conclusions respecting the therapeutic properties of this drug.

At the same meeting of the Academy, Dr. Ollivier read a paper in which he endeavored to prove that "pelade," or tinea decalvans, was a non-contagious and non-parasitic malady, and that its origin was purely nervous. He therefore considered it inexpedient, and even cruel, to prevent pupils affected with the malady from attending their schools, and sometimes for a lengthened

period, much to the detriment of their studies, and perhaps of their future career, particularly as even dermatologists are divided among themselves as to whether the matter is contagious or not. Professor Hardy, the well known dermatologist, took up the subject, and stated that although he never discovered a parasitic peculiar to the malady in question, yet from his vast experience he had every reason to believe that it was contagious, and this hypothesis was confirmed by the fact that since measures have been taken to exclude children so affected from schools the cases have become much less frequent in them. Dr. Cornil, the distinguished histologist, does not believe in the contagiousness of tinea decalvans in the majority of cases, for no one as yet has discovered either a mushroom or a micro-organism which may be looked upon as the peculiar agent of the disease. To this Dr. Hardy retorted that it does not follow that because no micro-organism was discovered in tinea decalvans it can be affirmed that this affection was not contagious, for although the microbe of measles and of scarletina has not been seen, no one will contest the contagious nature of these maladies.—*Paris correspondent Med. Rec.*

QUACK ADVERTISEMENTS IN RELIGIOUS NEWS PAPERS.—From time to time medical men and medical journals have protested against the prostitution of the columns of religious newspapers to the use of advertisers of quack nostrums. This protest does not apply to temperately worded representations of what seems to have been accomplished by, or what may reasonably be expected of, a remedy or device for the cure of disease or injury. But it does apply to advertisements couched in language which bears the stamp of falsehood on its face, or which is of such a character as to arouse suspicion in the mind of an intelligent man, uninfluenced by a money consideration.

The editors of most religious journals are, as a rule, men of such intelligence that they will hardly attribute to trade-jealousy alone the objection which medical men have to the recommendation of "sure cures" for baldness, fits, rupture, consumption, and so on, to persons who are apt to regard their religious teachers as safe guides in matters of health and disease; and who are not sufficiently familiar with the subtleties of the newspapers business to distinguish between the responsibilities of the editor and those of the publisher. As a fact most readers of periodicals have the impression that the advertisements they contain are endorsed by the editor. Advertisers rely upon this fact; and we cannot understand the casuistry which satisfies the conscience of a man who edits a periodical, ostensibly devoted to religion, which replenishes its coffers with the price of palpable falsehoods.

If it were true that a religious paper could not

be financially successful without taking money for the advertisement of worthless or delusive remedies, a course might be suggested worthy of the main object of these papers. But it is not true; for there are a few happy illustrations of the fact that, even in a religious newspaper, "honesty is the best policy."

We call the attention of our large circle of readers to this matter, in the hope that they will use their influence to put an end to what we regard as a serious blemish in religious newspapers, and one which injures the good reputation which they ought to enjoy. And we call the attention of those religious newspapers to which our remarks may apply to this matter, in the hope that we shall not have to recur to it in a more explicit manner. —*Med. and Surg. Reporter.*

REVELATIONS OF PREHISTORIC TARTAR.—Some curious evidences of the diet of our prehistoric ancestors of the "stone age" were recently brought before the Odontological Society of Great Britain by Mr. Charles White. Whilst examining some dolicho-cephalic skulls found in a "long" barrow near Heytesbury, in Wiltshire, Mr. White was struck with the thought that as particles of food become imprisoned in the dental tartar, sealed up in a calcareous cement, and can be made to reveal themselves on solution of this material, it would be an interesting revelation if the tartar found on these teeth of the stone age could be made to give up its secrets in a similar manner. He accordingly carefully decalcified some small portions with dilute hydrochloric acid and examined the sediment under the microscope. The sediment consisted of small, drab-colored masses, apparently composed chiefly of altered and disintegrated epithelial scales mixed with the contents of starch cells. Throughout these masses were scattered grains of sand in great abundance; polarized light showed these to be of two kinds, some being composed of siliceous and others of quartz or granite. Their presence was to be accounted for by the method of grinding corn between two gritty stones practised in those times, and the grinding surfaces of the teeth were worn down in the most extraordinary manner from the same cause. Besides these, scattered through the sediment, Mr. White was able to identify portions of husks of corn, hairs from the outside of the husks, spiral vessels from vegetables, husks of starch, the point of a fish's tooth, a conglomeration of oval cells, probably of fruit, barblets of feathers, portions of wool, and some fragments of cartilage, together with some other organic remains which he failed to recognize. "Long" barrows are considered by archeologists to be older than the round barrows, and it is thought probable that they contain the relics of the earliest inhabitants of Britain of whom any sepulchral monuments exist. This

opinion is based upon the fact that no weapons or instruments of metal of any kind have ever been found in them, though weapons of bone and stone are occasionally met with. The pottery, also, found in them is of the rudest kind, and quite devoid of ornament. The fact that vegetable tissue should be found in such a state as to be easily recognizable after the lapse of probably not less than three thousand years, is certainly remarkable; whilst the presence of fragments of wool and feathers would seem to indicate that these people were accustomed to eat their food in an uncooked condition.—*Brit. Med. Jour.*

SALT IN MILK FOR CHILDREN.—Dr. Jacobi says that the physiological effect of chloride of sodium is very important, no matter whether it is directly introduced through the mother's milk, or added as a condiment to cow's milk, or vegetable diet. Both of the latter contain more potassium than sodium, and neither ought ever to be given to the well or sick, without the addition of table salt. A portion of that which is introduced may be absorbed in solution; another part is, however, broken up into another sodium salt and hydrochloric acid. Thus it serves directly as an excitant to the secretion of the glands and facilitates digestion. Therefore during diseases in which the secretion of gastric juice is interfered with, or in the beginning of convalescence, when both the secreting faculties and the muscular power of the stomach wanting, and the necessity of resorting to nitrogenous food is apparent, an ample supply of salt ought to be furnished. The excess of acid which may get into the intestinal canal unites with the sodium of the bile in the duodenum, and assists in producing a second combination of chloride of sodium, which again is dissolved in the intestines and absorbed. Its action in the circulation is well understood; it enhances the vital processes, mainly by accelerating tissue-changes through the elimination of more urea and carbonic acid.

A very important fact is also this; that the addition of chloride of sodium prevents the solid coagulation of milk by either rennet or gastric juice. The cow's milk ought never to be given without table salt, and the latter ought to be added to women's milk when it behaves like cow's milk in regard to solid curdling and consequent indigestibility.

Habitual constipation of children is also influenced beneficially, for two reasons: not only is the food made more digestible, but the secretions of the alimentary canal, both serous and glandular, are made more effective by its presence.—*Archives of Pediatrics.*

THE ETIOLOGY OF TYPHOID FEVER.—Dr. Quine's views on typhoid fever are summarized by the

Philadelphia Medical Times as follows: 1. The exciting cause is a specific, poisonous, microscopic germ; and under no circumstances can typhoid fever originate from the influence of filth alone, unless that filth contains the specific germ. 2. The germ is practically immortal. Typhoid dejecta may be imprisoned in an old cesspool or unused sewer-pipe for half a century, and then, after a lapse of this period, when this cesspool or unused sewer-pipe is opened, the typhoid germ literally springs into existence with frightful malignancy, and a few whiffs from the accumulations in the cesspool will be sufficient to cause it. The germ does not die spontaneously; it can be killed. 3. The germ multiplies in the human body, and an inconceivably minute quantity of this germ introduced into the human system makes the individual susceptible to the disease. An individual having a dozen movements of the bowels a day, each dejection contains germs enough to impart it to a hundred or thousand individuals; so there is clear proof that the germ multiplies in the human body. 4. The specific germ of typhoid fever is eliminated by the bowels. A person may inhale the breath of a typhoid patient without danger of contracting the malady. He may lie on the same bed throughout the entire course of the disease without danger to himself, unless in some way the intestinal dejections or emanations have found their way into his own circulation. The poison is not contained in the urine, nor in the emanations from the surface of the body, but simply in the fecal discharges. 5. The fresh germ itself is innocuous—non-poisonous. Some investigators in Germany have engaged in the unpleasantness of drinking down fresh typhoid discharges, and have demonstrated with absolute certainty that these fresh discharges are innocuous. 6. In order for the discharges to acquire activity or virulency, they must be exposed to atmospheric air; hence old typhoid putrid discharges undergo partial decomposition. 7. The poison of typhoid fever is almost invariably swallowed in drinking from impregnated water-supplies. It is sometimes swallowed in the food. In rare, exceptional cases, typhoid germs may be diffused through the atmosphere, and find their way into the human body through the lungs. 8. A patient may have the disease two or three times; one attack does not protect him from subsequent attacks.—*Med. Rec.*

SHALL THE LANGUAGE OF PRESCRIPTIONS BE SIMPLIFIED?—There is among medical practitioners an increasing disposition to substitute for the series of classical terms hitherto used in prescribing their simpler and more accurate equivalents in the vernacular. The reform is one which has our approval. In making this admission, however, it is necessary to define with some preciseness the extent of its application. For the purpose of pre-

sent argument, a prescription may be conveniently regarded as consisting of a professional and a popular part, the former being concerned with a statement of drugs and their quantities, the latter with directions for their use. The first great requisite that should belong to such directions is, we take it, clearness. Their meaning must be plain beyond all chance of misunderstanding on the part of inexperienced dispensers, a result hardly to be expected if words, phrases, and abbreviations are clothed in a garb of studiously quaint antiquity. The advantage conferred by a common scientific language is in this connection, as a rule, wholly inoperative, since a translation of injunctions to the patient is not usually required, and, should it be needed in consequence of a change in the medical attendance, is not difficult to obtain. Doctor, chemist, nurse, and patient are here on common ground that has less to do with medicine than with attendance on the sick, and their simplest and surest means of communication is the native tongue. It is otherwise when we come to component parts and quantities of a prescribed mixture. These are the special concern of practitioners, and a clear and easy understanding among all such, of whatever country, with regard to the means of treatment, is of the first importance. Alike for this purpose and to allow of advisable brevity, the use of one common medium of expression is decidedly preferable to any other system. We are therefore of opinion that the best and most natural result of the reform in prescribing, which is now in progress, will be to leave the body of the prescription in its present convenient though antique form, and to insure the most accurate observance of instructions to the patient by expressing these in the language of every-day life.—*Lancet.*

THE EXAMINATION OF WATER.—Dr. Parkes, of London, after reviewing the various methods of examining water, concludes that chemical analysis, aided by microscopic examination, is sufficient in the great majority of cases to determine the amount of organic pollution of a water, and whether it is of recent date. In many cases the source of the pollution, whether from sewage or vegetable matters chiefly, can also be determined; but there is no possibility of ascertaining whether the water thus polluted is actually potent for evil or whether it may not be entirely harmless. Chemical analysis is powerless to deal with those cases of infinitesimal pollution of a pure water with infective material from the human body. Cultivation tests are equally powerless to cope with such cases. The only possible way of ascertaining the probable effects on the human system of drinking such water, is for the operator to perform the experiment on his own person—a course not likely to be pursued. The cultivation tests, of now practised, add very

little to the results attainable by chemical analysis. Micro-biology must undergo further development before gerin-cultivation methods can be expected to throw much light on water-pollutions. Lastly, the sanitary survey of the source of the water, or its mode of storage, should always be carried out whenever any doubt exists as to the freedom of the water from all possible sources of contamination.—*Practitioner.*

ON THE TREATMENT OF FELON WITHOUT INCISION.—Unless it is contra-indicated I generally begin the treatment with a mild cathartic, the following being that commonly employed :

R Ex. colocynth. comp.
 Mass. hydrarg. āā gr. x
 Pulv. ipecacuan. gr. ii

℞. Div. in pil. No. iv. Sig.—Take two at night and two on the second night after.

A tonic is administered from the first, one containing iron being preferred. The formula of this is as follows, the proportions being somewhat altered to suit individual cases :

R Magnesii sulphatis ʒ i
 Ferri sulphatis ʒ i
 Acidi sulphurici dil. ʒ iv
 Syr. zingiberis ʒ i
 Aquæ ad ʒ iv. M.

Sig.—Teaspoonful in water, through a tube, after eating.

In addition to this it is my custom to administer the sulphide of calcium from the beginning to the end of the treatment. I usually give it in the form of $\frac{1}{4}$ grain gelatin coated pills, one being given every two hours irrespective of food or other medicine. In order to have any good effect from this latter drug, it is essential that it should be fresh and pure. It is well to test the pills by biting them, when the characteristic odor of sulphuretted hydrogen becomes at once noticeable if the article is good.

Alcohol in all forms should be absolutely interdicted, and the malted liquors appear to be almost very harmful. The diet should be full and nourishing, but not stimulating. Milk is often given, sometimes in the form of punch and egg-nog between meals. Tea and coffee may be taken in moderation, but unnecessary and indigestible articles should be avoided.

The local treatment of felon consists simply in the constant and very thorough envelopment of the affected part in the diachylon ointment of Hebra, which, when properly prepared, forms a most agreeable and soothing dressing.

The author does not pretend to abort all cases, as he confesses that in many he gets suppuration and in some necrosis.—Dr. Buckley in *Jour. Am. Med. Ass'n.*

THE TREATMENT OF CHRONIC LEG ULCERS WITHOUT REST.—Baum, in the *Deutsche Medicinische Wochenschrift*, affirms that by adopting the following mode of treatment, ulcers of the leg may be cured while the patient follows his usual employment. First, the whole leg is most carefully washed with soap, shaved, and brushed with sulphuric ether. Then the ulcer is carefully disinfected with a three per cent. carbolic solution, applied by cloths dipped in it, which are kept on for half a day. The leg is then carefully dried and strapped, the strips crossing in front and overlapping at the edges. The plaster must be spread thickly on the linen; breadth of each strip, four to five centimetres ($1\frac{1}{2}$ to 2 inches). Above this strapping eight layers of carbolic gauze are laid, and fastened with a carbolic bandage.

Every second day the bandage is taken off, and the carbolic gauze, especially over the situation of the ulcer, is thoroughly sprayed with a twenty per cent. carbolic spirit, then a fresh bandage is applied.

This treatment is continued for four weeks. On removing the whole dressing, the ulcer is found, in most cases, completely healed up. If a small spot should still be open, a small similar dressing is put on for a fortnight.

PROFESSOR RUNEBERG some time ago advanced the view that pernicious anemia may be dependent on the presence of intestinal tape-worm (*Bothriocephalus latus*). His views were supported by some, and combated by others. A case which tends to support Runeberg's view is recorded by Schapiro in the *London Lancet*. A lad thirteen years of age came under treatment for intense anemia of a progressive type, characterized by diminution of red corpuscles and of hemoglobin, with liability to cutaneous hemorrhage, epistaxis, etc., marked cardio-vascular bruits, pyrexia, and without any emaciation. It was not until the administration of anthelmintics had resulted in the evacuation of a large quantity of segments of bothriocephalus, that he began to regain strength and color. His recovery from that date was rapid. The writer attributed the anemia to the disintegrating action, on blood-corpuscles, of some chemical product of the parasite which was absorbed into the blood.

DURING the last year Dr. Hartmann (*British Medical Journal*) has treated otitis with instillations of several drops of a solution (one in ten) of carbolized glycerine with excellent results. Pain instantly disappeared, and the progress of the affection was checked. In cases where effusion existed, the relief obtained was equally great. M. Rohrer, who confirms M. Hartmann's statements, recommends a solution of twenty per cent.

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MATRICULATION IN MEDICINE.

The necessity for an extensive general education in medical matriculants must be apparent to all. Not only in the interests of science and public welfare, but also in the student's own best interest, does this necessity exist. That we, in Canada, have advanced the standard of matriculation in the past, and that our present examination is higher than that required by many schools of medicine, is perfectly true; but it is far from proving that we have arrived at the point from which no further advance can be profitably made.

The matriculation now insisted on by our Medical Council, cannot be said to err on the side of undue severity. Any youth of sixteen or seventeen years, of but moderate ability, having taken advantage of the public and high school privileges so common in Canada, finds but little difficulty in passing the required examination. But that such limited attainments thoroughly qualify him to comprehend and digest medical science, and to attend, with the greatest advantage to himself, our medical colleges is undeniably absurd. All physicians of experience must constantly admit, with humility and mortification, their deficiency in the knowledge of so extensive a science, after years of study subsequent to their college course, and must daily deplore their inability to completely grasp all the principles of so vast a subject. They find as they advance in knowledge that "Alps on Alps arise,"

that they are then only in the vestibule, and begin to despair of ever arriving at the inner temple. If then, after years of mental toil and conscientious devotion, at an age when our capacities are fully developed, we meet with so much difficulty, what shall we say of the youth, who enters college with a sufficient cramming at high school to barely enable him to pass the matriculation which is now required, at an age when his mental grasp is weak and the animal propensities largely prevail? His first term at college must be largely devoted to acquiring knowledge which he should have possessed prior to his entrance, and he must be handicapped during his whole medical course from having undertaken too much for the four sessions at college, while carrying the weight of his defective preparation in the start. Yet he often succeeds after this defective course, by the use of more or less cramming, in passing the final examinations with some credit as far as book-work and answering the questions prepared are concerned, but let him be tested practically by placing a patient before him, and he will most lamentably fail. Yet, in America hundreds of such are annually graduated, and passed out on the public, certified by an array of prominent and experienced medical men, as qualified to treat all the ills incident to humanity, and in whom a suffering public are advised they may confidently trust in the time of peril. But, notwithstanding the signatures of these experienced physicians to the certificates of qualification, they would hesitate to subject themselves or their families to the skill of these novices, whom they have solemnly affirmed to be duly qualified. How necessary then in the interests of the public as well as the profession, that a good mental training be made a *sine qua non*, prior to undertaking so difficult a study as medicine. At best, medical graduates must be very imperfect Drs. until experience has taught them many things. But a well trained and educated man has innumerable advantages in acquiring medical knowledge, and in perfecting himself as far as possible for the onerous duties of his subsequent life. "A little learning is a dangerous thing," and nowhere is this more evident than in our profession. That many medical schools on this continent demand a lower matriculation, and annually turn out many less qualified graduates on a suffering community is not to the point. We are in no

way responsible for this sad state of affairs. We can only express our sincere regret that a noble profession is thus prostituted for mercenary purposes, often we fear at the expense of the lives of many citizens. We should do our duty, by raising the standard, which action may to some extent influence others who are derelict in this direction.

The facilities for obtaining a fairly good education in this country at present must result in the coming generation being better educated than the present. If the profession do not advance with the age, we must fail to hold the superiority and prestige hitherto generally admitted by all, and lose the confidence and respect which for ages has been commanded by our superiority, and acknowledged by the world. The science of medicine is widening so rapidly, is so far reaching in its component factors, so extensive in its domain, so often dependent on almost every other science, and so comprehensive in its scope, that the most powerful intellect must fail to grasp its multiple sides unless somewhat intimate with the collateral sciences, and pretty thoroughly imbued with the principles of all. Therefore, if we cared little for the public well-being, we should in the interests of science, the prosperity of our chosen profession, and its elevated position among men, refrain from sending out incompetents.

A profession can only be judged, in the mind of the laity, by its exponents. Consequently those half educated representatives practising the profession on a low level, solely for the remuneration it affords, must naturally degrade and dishonor it in the eyes of all intelligent men, and bring it down to the level of a trade.

It has been argued that an extensive preliminary education would prohibit many from entering college, and deprive poor men's sons of the privilege of obtaining the profession, but it must not be forgotten that incompetent physicians may deprive both poor and rich not only of their sons but other members of their families altogether. It is hardly possible to conceive that either the student's income or the time spent by him in proper preparation, bears any relation to the essential necessity of a thorough qualification prior to trusting the welfare and lives of our fellow citizens in his hands.

That the teaching of the schools should be limited to the mental or financial capacities, of all who

seek from whim, caprice or otherwise, to enter the profession, is so pregnant with danger to the public, derogatory to the profession, and seldom beneficial to the student in after life, that it is not worthy a moment's consideration. It is to be hoped, therefore, that the authorities may take into serious consideration the necessity of raising the standard of matriculation at an early date, with the view not only of protecting the public interests in the future, but also of maintaining our reputation as a learned profession, inherited from an illustrious ancestry, through an extended period of time. The noble record handed down to us must not be permitted to depreciate in our hands. Our ambition worthily seeks to add to that record, and maintain the honorable position so long held by the profession, as the vanguard in the army of science, struggling to subdue not only pain and disease, and postpone the dire event advancing upon all, but to enlighten the darkness of superstition and ignorance and obviate their untold evils to mankind.

THE FREE USE OF WATER AS A THERAPEUTIC AGENT.

The opinion that the civilized races are too sparing in the use of drinking water, has been advanced during the past few years by some of the leading therapeutists of the world, and the idea that this proposition is correct has taken a considerable hold, not only upon the majority of the members of the medical profession, but through them has permeated to the more intelligent of the laity. Water is said to be a solvent of more substances than any other fluid, which is nothing more than might be expected if we consider its vast importance in the whole system of nature.

Now, the unsparing use of this solvent may be looked upon as the surest method of flushing the system, and of keeping the various organs and their ultimate histological elements in good working order.

Regarding the use of waters at spas and mineral springs, there can be no doubt that the complete change in the mode of life which frequenters undergo while taking a course at one of these resorts, has as much to do with the favorable results obtained as the imbibition of quantities of nasty sulphurous or chalybeate water. The rest

and freedom from work and worry is perhaps more needed by the worn-out merchant or jaded politician than is iron or alkalies. Indeed, this principle is now so widely recognized that sanitariums are springing up in places where no medicinal properties are vaunted for the waters. To ladies who have gone through a "season," with its many anxieties, its intense excitement, and its reversing the periods of rest and wakefulness, the change also to an out-door life, pure air, healthful exercise, lessened excitement and pleasant, easy-going life at the seaside or health resort, is just what is needed to restore the over-worked nervous system to its proper balance, and give that sense of lightness and well-being which can only be felt when all the organs and tissues of the body are thoroughly depurated. Doubtless the waters at medicinal springs, taken in large quantities, are beneficial to many forms of disease. Why is it, however, that with all the refinement of analysis of our chemical laboratories brought to bear upon mineral waters, with a positive knowledge of their every constituent, even down to three decimal places in grains, that we are not able to get the same good results from the administration of such remedies, when artificially prepared, as are got when prepared in nature's laboratory? We can prescribe any or all of the salts found in the most noted springs of the world, to be taken out of a spoon with the utmost regularity; we may regulate the diet, the sleeping hours, the amount of work, even, which shall be indulged in by our patient, and yet get no such results as are got at health resorts. The difference in result is believed to be due, leaving out the advantage gained by the change of scene, air, etc., already referred to, to the greater dilution of the remedies contained in the natural waters. We said just now we could order our patient's remedies to be taken out of a spoon. If we ordered them taken out of a large tumbler, we should have better results with many of them. There is not enough plain water taken by most of us, especially in cities and towns. For social reasons women refrain from drinking water, and so often do men. Our working population, afflicted by no such restraints, and prompted to quench their thirst by plentiful draughts of water, are much better off in this respect. Such people rarely need a sojourn at a spa, and, indeed, get much of the benefits which visitors to such resorts

obtain, by drinking largely at home. It flushes the system, bathes every tissue, dissolves and removes the products of tissue metamorphosis, keeps the skin more active, stimulates the kidneys to the removal of waste matter, and unloads the emunctories generally, and so leaves the cells in the best condition for functional activity, unclogged by surrounding debris and able to perform their respiration freely and naturally. Thus it not only removes old, worn-out matter, but paves the way for the re-construction of new material, and the whole system is as it were, from day to day rejuvenated. This explains the popular idea that drinking much water increases the weight of the body, which, under many circumstances, is absolutely true. Fuller pointed out the necessity of ordering large draughts of water when administering chalybeates. Ringer speaks of water as being a "true tonic, improving the vigor of the body and mind." The ordinary tumblerful of cold water every morning is an excellent hygienic measure; it washes out the stomach, clearing its membrane of mucous which would hinder the free secretion of the gastric juice, acts locally as a tonic to the gastric walls, stimulates the action of the bowels, and is, as Fothergill says, "a true hematinic, by its removal of waste matter, which hinders histogenesis." The same writer also states that the difference between no results from the administration of iron, and satisfactory treatment, lies in no more than this, the free use of water as a diluent.

THE WILLIAM F. JENKS MEMORIAL PRIZE.—The First Triennial Prize, of two hundred and fifty dollars, under the Deed of Trust of Mrs. William F. Jenks, will be awarded to the author of the best essay on "The Diagnosis and Treatment of Extra-uterine Pregnancy." The conditions annexed by the founder of this prize are, that the "prize or award must always be for some subject connected with Obstetrics, or the Diseases of Women, or the Diseases of Children;" and that "the Trustees, under this deed for the time being, can in their discretion publish the successful essay, or any paper written upon any subject for which they may offer a reward, provided the income in their hands may in their judgment be sufficient for that purpose, and the essay or paper be considered by them worthy of publication. If published, the

distribution of said essay shall be entirely under the control of said Trustees. In case they do not publish the said essay or paper, it shall be the property of the College of Physicians of Philadelphia." The prize is open for competition to the whole world, but the essay must be the production of a single person. The essay, which must be written in the English language, or if in foreign language, accompanied by an English translation, should be sent to the College of Physicians of Philadelphia, Pennsylvania, U.S.A., addressed to Ellwood Wilson, M.D., Chairman of the William F. Jenks Prize Committee, before January 1, 1889. Each essay must be distinguished by a motto, and accompanied by a sealed envelope bearing the same motto and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay. The committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year. The committee reserves the right to make no award if no essay submitted is considered worthy of the prize.

PUNISHING PATIENTS FOR THEIR OWN GOOD.—

The following from the *Lancet* will be appreciated:—

A woman, at Berlin, brought a little boy aged four to be treated. Some local examination was necessary, which, though it could not in the least have hurt the child, caused him to scream and kick so violently that nothing could be done with him. The doctor did his best to soothe the little fellow, but all to no purpose. He then came to the conclusion that the child was crying merely from naughtiness, and, losing all patience, administered a few slaps on the buttocks for the cure of this affection. The mother became very angry, and, snatching up the child, carried him off, subsequently obtaining a summons against the doctor. The court, however decided that the defendant had slapped the child with the object of doing him good, and therefore discharged the case. A similar charge was brought some time ago against a St. Petersburg medical man in a Russian court by an officer's wife. Here also the court took the doctor's side. Those who have much practice amongst children know how tiresome they can be, especially when they are spoilt and poorly. In these cases it is often found needful to resort to some system of rewards, and even to punishments; but it certainly is not advisable for a medical man to take upon himself to slap a patient, though he may be occasionally sorely tempted to imitate the example of the Berlin defendant. Whether an

English court would regard the matter in the same light as the Berlin and St. Petersburg ones seem to have done, may be open to doubt.

There is no doubt we all have felt that the *argumentum baculinum* would often prove very efficacious in cases like the above. So also have we all felt what a blessing would be conferred upon many a patient suffering from an incurable disease, if the law permitted us to grant them a speedy and easy relief from their earthly woes. But it is to be feared that in either case abuses would creep in, which would more than counterbalance the good which might result.

ADVERTISING EXTRAORDINARY.—Following is an advertisement which we copy *verbatim et literatim* from a newspaper, printed not a thousand miles from Toronto:—

TO MY PATIENTS, PATRONS, AND FRIENDS.

Desirous of becoming acquainted with the most recent advances in Medicine and Surgery; and of learning thoroughly and practically the best and latest treatment of all diseases, I have decided upon taking a short course in the now renowned Medical Schools of New York—in order that I may the better treat all who may honor me with their confidence. During my absence, Dr. ——— will take charge of my practice, and I am pleased to be able to recommend him to all my friends, confident that he is ably qualified to give the best attention and treatment to all calling upon him. Dr. ——— has had the advantage of a full course in New York, and is careful, steady and attentive, and will, I doubt not, give the best satisfaction. Hoping to meet all my friends again in a short time, I remain, Yours most sincerely,

We are glad to state that the *esprit de corps* of the profession in Canada is such, that any comment upon the above is unnecessary. We are weary of the subject of unprofessional advertising, having written short editorial articles on it two or three times in the past two years. Hardly a week passes without our having our attention called to this subject, but lest we should lay ourselves open to the charge of always harping on one string, and of giving our readers our ideas on the subject *ad nauseum*, we usually pass such remainders over in silence.

IODINE TRICHLORIDE. — This preparation of iodine (*Lancet*) is a stronger germicide than carbolic acid, and nearly as strongly germicidal as the

bichloride of mercury. It is soluble in water, and is not poisonous. It may be used in aqueous solution in the proportion of 1 part to 1,000 of water. This solution may be used for the hands, wounds, or instruments. Langenbech speaks very favorably of it, and recommends it for gonorrhœal injection in the proportion of 1 to 1,200. In dyspepsia due to bacteria, he gives the solution in teaspoonful doses every two hours. When used for the hands, instruments, etc., the slight discoloration may be relieved by the use of ammonia.

THE NITRITES IN ASTHMA.—Dr. Fraser (*Am. Jour. Med. Sci.*), writing on the cause of asthma, and the influence of the nitrites upon it, establishes the view that the dyspnea of asthma is caused by spasm of the bronchial muscles, and points out the value of the nitrites in its relief, and that the best therapeutic effects are not obtained by the inhalation of nitrites, but by their administration through the stomach. The facts seem to justify the assertion that their administration in this manner in asthmatic dyspnea or orthopnea is entitled to rank as one of the most valuable applications of pharmacology to the treatment of disease, an application at least as valuable as that in the painful agina of aortic disease, to which nitrites are at present almost restricted.

PERMANGANATE OF POTASH IN TOOTHACHE.—Dr. Popoff writes, says the *Br. Med. Jour.*, that he has most successfully treated upwards of three hundred cases of toothache from dental caries, by administering one-twentieth per cent. solution of permanganate of potassium in the form of a mouth-wash. The following is the formula :—

R.—Potass. permang., 3 grains; aq. destil, or fontanæ, 1 (Russ.) fl. pound, M. One tablespoonful to be taken in the mouth, every half-hour, and to be held therein on the affected side for several minutes. The most agonizing pain is said gradually to disappear in a few hours. The wash acts, besides, as an excellent deodorizer.

GANGRENE FOLLOWING THE USE OF COCAINE.—Dr. Nichols relates (*N. Y. Med. Jour.*) two cases of gangrene occurring in minor operations, cocaine having been used as an anesthetic. The first was the amputation of a crushed finger, where an injection of 15 min. of a 15% solution of cocaine

hydrochloride had been used. On the fourth day gangrene was found, and re-amputation resorted to. The second case was one of circumcision, in which gangrene showed itself in the third day. The writer queries, what part, if any, did cocaine play in the causation of gangrene. Both patients were healthy, and were aged sixty-five and twenty-four, respectively.

CREASOTE IN PHTHISIS.—Numerous cases of improvement in phthisis by the administration of creasote, have been reported (*Lancet*). It is useful in the first and second stages, but not in the third stage of this disease. It may be given in capsules, pills, or in wine, glycerine, or fish-oil, to the amount of about 3 drops in 24 hours. It produces an alleviation of some of the most distressing symptoms, as lessened cough and expectoration; fever and night sweats; as also increase in body weight. The above seems to be fully substantiated by careful observation in numerous cases by prominent physicians, and is therefore worthy of the most serious and careful investigation by the profession.

FOR IRRITABLE BLADDER.—The following is said (*Maryland Med. Jour.*) to allay the frequent desire to urinate, with irritable bladder, when due to phosphatic deposit in the urine.

R.—Acidi benzoici, ʒij.
 Boracis, ʒiij.
 Aquæ, ʒxij.

M. Sig.—Tablespoonful three times a day.

This mixture has, upon two occasions, acted so efficiently in what was thought to be cystitis that cystotomy was dispensed with.

STROPHANTHUS.—The London correspondent of *The Therap. Gazette* says of strophanthus:—"Strophanthus is at the head of cardiovascular agents; it rapidly raises the arterial pressure in cases of dilatation of the heart, and its power for good is shown by free diuresis and a speedy improvement of the subjective symptoms. Caffeine is regarded more as a direct renal stimulant, not a cardiac tonic, and to secure its full action it should be combined with digitalis, convalaria or strophanthus."

EHRENDORFER'S PENCILS OF IODOFORM.—These pencils (*Lancet*) have the following composition :—Two drachms and a half of iodoform and fifteen

grains each of gum glycerine and starch, to make one bougie. They have been favorably known to gynecologists for some time, but deserve a wider field. They continue to melt for three or four days and so keep the genital passages irrigated constantly during that time, with a mild stream of iodoform. They are said to be useful in cases of ruptured perineum, by simply introducing them into the vagina.

PROF. H. C. WOOD speaks highly of the power of the following (*Phila. Med. Times*) to abort an acute bronchitis:

R.—Potasii citratis, ʒi.
Syr. ipecacuanhæ, ʒj.
Succi. limonis, ʒij.
Aquæ, ʒiij. M.

Sig.—ʒij every three hours.

AMERICAN MEDICAL ASSOCIATION.—The thirty-ninth annual session of this Association will be held in Cincinnati, Ohio, on Tuesday, Wednesday, Thursday and Friday, May 8, 9, 10 and 11, commencing on Tuesday, at 11 a.m. Addresses have been arranged for the various departments by eminent men from all parts of the Union. Secretaries of Medical Societies are earnestly requested to forward at once, lists of their delegates to Wm. B. Atkinson, M. D., Secretary, 1400 Pine St., Philadelphia.

LAXATIVE GASTRIC TONIC.—Bardet has used the following combination (*Jour. de Méd.*) with advantage:

R Ext. fluid. cascara sagrad. ʒ 5.
Tinct. nucis vom. ʒ 30.
Aquæ destil. ʒ 28½.
Syrup. simpl. ʒ 3¾.—M.

S.—ʒi. p.r.n.

FOR SPERMATORRHEA.—The *Med. Summary* says:—The monobromide of camphor has been successfully used in the treatment of spermatorrhœa, where a host of the usual remedies had been administered with no satisfactory results; finally, the monobromide of camphor was given in two to three-grain doses, four times daily, with prompt effect and perfect cures.

INCONTINENCE OF URINE.—Dr. W. S. Cline, of Tom's Brook, Va., writes as follows to the *Med. World*, in reference to an enquiry by a correspond-

ent as to treatment of incontinence of urine. If he will get 100 Parvules cantharides, ʒ₀ gr., prepared by W. R. Warner & Co., and give one thrice daily, he can cure his patient, and she can drink all the water she wants. I never withdraw usual diet. Have never seen a failure.

To ALLAY ITCHING.—The following is recommended:

R.—Sodii carbonat., ʒss.
Morphiæ sulph., gr. vj.
Aq. sambuci, ʒj.

S.—For external use. M.

LITHIUM AND ARSENIC IN DIABETES.—Vigier recommends (*Therap. Gaz.*) the following:

R.—Lithii carbonat., gr. iss.
Sodii arseniat., gr. ʒj.
Ext. gentianæ, gr ¾.

For each pill. To be taken morning and night, and continued until sugar has disappeared from the urine.

BICARBONATE OF SODA IN NOCTURNAL INCONTINENCE.—Dr. Sell recommends (*Le Practicien*) as a remedy which has often proved successful in nocturnal incontinence of urine, bicarbonate of soda in teaspoonful doses at bedtime. He states that the patient is either completely cured or greatly benefited.

PROF. WAUGH (*Phil. Med. Times*) prescribes the following for myalgia in a strong man:—

R.—Ammon.-chlorid., gr. xxx.
Ext. belladon., gr. ½. M.

Sig.—As a dose three times a day.

ANTIPYRINE IN THE "ALGIAS."—Dr. Poole, writing to the *Med. Times*, speaks highly of the above remedy in the "algias." He has had only good results from its use. Even that *bête noir*, sciatica was relieved in the case of a woman of 57, by the exhibition of a few fifteen grain doses. The writer says he has not found the same benefit from antifebrine.

BRITISH DIPLOMAS.—The following gentlemen have received the L.R.C.P. London at the late examinations:—Dr. W. P. Caron, T. Ovens (Trin.), H. C. Scadding, W. R. Shaw (Tor.), and F. J. White, of Montreal. J. W. Peaker, M.B., (Tor.), has taken the M.R.C.S., Eng.

STERILITY IN MEN.—Kehrer, of Heidelberg (*Med. News*), says the percentage of sterility in men is 33.32.

BORACIC ACID FOR STYES.—A three-per-cent. solution of boracic acid dropped on the stye, several times a day, is said to effect a cure and prevent a return of the trouble.

Dr. Afanasiëff has succeeded in finding (*Lancet*) and cultivating the bacillus of whooping cough.

PROF. WOODBURY advises the administration of sodæ phosphat. to children with clay-colored stools, instead of the routine dosage with mercurials.

It is said that Prof. Unna, during his visit to America, received a consultation fee of \$6,000 from a wealthy lady of New York.

It is stated (*Lancet*) that enveloping the limb for one night in flowers of sulphur, will cure sciatica. The urine next morning smells strongly of sulphuretted hydrogen.

A TEACHER said to a member of a certain State Board of Health who was investigating the condition of her room, "No, I haven't any ventilators: I don't see any use for them." "But how do you keep the air pure?" "Oh, I've got a thermometer."

THE *Medical Record* makes the request of its contributors to send in their manuscripts folded, not rolled. This suggestion is excellent and will save phosphates to medical editors. The *Record* says: "A voluminous manuscript which has been rolled up for a long time, is a most unmanageable thing."

JONATHAN HUTCHINSON makes the suggestion that the long-continued administration of arsenic in large doses may produce a form of cancer closely allied to epithelioma, but presenting peculiar characteristics.

THE giant Winkehoneyr now on exhibition in London, is eight feet nine inches in height. He falls short of the famous Irish giant O'Brien or O'Byrne, whose skeleton is preserved in the museum of the Royal College of Surgeons, by some inches.

PROFESSOR WAUGH has had much success with ext. jaborandi fl. in erysipelas. He administers twenty minims every two hours till perspiration commences. If the disease recur he resumes the use of the drug.

WHEN it is a question of nerves, says the *Med. and Surg. Rep.*, the power of imagination is supposed to be stronger in women than in men, but this was not shown in a recent hospital experiment. Dr. Durand, wishing to test the practical effect of mind disease, gave a hundred patients a dose of sweetened water. Fifteen minutes after, entering apparently in great excitement, he announced that he had, by mistake, given a powerful emetic, and preparations must be made accordingly. Eighty out of the hundred patients became thoroughly ill, and exhibited the usual result of an emetic; twenty were unaffected. The curious part of it is that, with very few exceptions, the eighty "emeticised" subjects were men, while the strong-nerved few, who were not to be caught with chaff, were women.

Books and Pamphlets.

TEXT-BOOK ON MATERIA MEDICA AND THERAPEUTICS. By Robert T. Edes, A.B., M.D., Professor of Materia Medica in Harvard University, etc., etc. Philadelphia: Lea Brothers & Co., 1887. Toronto: Carveth & Co.

This work is modest as to its size, and we believe fairly fulfils the author's expectation of presenting to the student and young practitioner "a concise, practical working view of the present state of Pharmacology and Therapeutics." The work has our thorough approbation in several respects, but in none more than in the omission of descriptions of crude drugs, which descriptions, so far as utility to the learner is concerned, would "be far surpassed by a few hours in a cabinet of Materia Medica or in a well furnished drug store."

The author perhaps inclines too much to condensation when discussing important drugs. We do not believe that 'compendis' are the kind of reading most beneficial to a student, or that short, terse statements of facts are easiest understood or remembered.

The work in hand does not compare with those

of Bartholow or Wood, but will, we believe, be useful to the student who has not time to read more extended works.

A COMPLETE HAND-BOOK OF TREATMENT. By William Aiken, M.D. Edin., F.R.S. Edited by A. D. Rockwell, A.M., M.D. New York: E. B. Treat & Co. 1887.

This volume contains in a short compass the most important points on the treatment of disease as met with in every day practice. We have had occasion to consult it not a few times during the past month, and have found it very useful when time did not permit the perusal of everything that could be said upon any certain disease, but did allow of a glance at the best and most recent methods of combating it. We recommend the book as of great practical use. The printing and proof-reading are not what they should be, considering the high standard of excellence American medical works have attained in these respects.

LEA BROTHERS & Co., of Philadelphia, will shortly publish *A Clinical Atlas of Venereal and Skin Diseases, including Diagnosis, Prognosis and Treatment*, by Professor Robert W. Taylor, M.D., formerly President of the American Dermatological Association, and Joint Author of Bumstead & Taylor's *Pathology and Treatment of Venereal Diseases*. The work will be issued in eight parts, aggregating 58 large folio chromo-lithographic plates, measuring 14 x 18 inches, and containing about 20 figures, many of them life-size, executed with the utmost faithfulness and beauty of detail. These plates will delineate typical cases from the practice of the author, and selections from the entire literature of Europe, including among others the works of Cullerier, Fox, Fournier, Hebra, Hutchinson, Kaopsi, Neumann and Ricord. The text will deal chiefly with the practical aspects of the subjects, and will be illustrated with a series of unusually large engravings, executed specially for this work, and drawn principally from original matter in the possession of the author.

DISEASES OF THE SKIN. By John V. Shoemaker, A.M., M.D., Prof. of Skin and Venereal Diseases in the Medico-Chirurgical College and Hospital, of Philadelphia, etc. New York: D. Appleton & Co. Toronto, Williamson & Co.

This is a large work of 633 pages, and profusely

illustrated with colored plates. It is a treatise on the skin which we can recommend to every physician as a work of reference, and in which he will find the latest views on pathology and treatment. At the end of the work are a number of formulæ, which will prove very valuable as a reference. It is certainly a very complete book.

DIFFERENTIAL DIAGNOSIS OF THE DISEASES OF THE SKIN. By Condict W. Cutler, M.S., M.D., Assistant Physician for Skin and Venereal Disease at the New York Hospital. New York: G. P. Putnam & Sons.

This a tabulation of the various diseases of the skin contrasting each with others it may resemble. A work in which one can quickly find the main points in diagnosis.

THE EPISTLES O' AIRLIE is the title of the collection, in book form, of the "Airlie" letters which have appeared in *Grip* during the last few years. Mr. J. W. Bengough has drawn special illustrations for this edition, and we think the book is destined to become popular.

WHY I JOINED THE NEW CRUSADE. A Plea for the Placing of Taxes on Land Values only. By Richard T. Lancefield. Delivered before the Anti-Poverty Society of Toronto. Grip Publishing Co., Toronto, 1887.

Births, Marriages and Deaths.

At Kobe, Japan, January 9th, Rev. Wm. Cassidy, M.D., Medical Missionary to Japan, late of Toronto, aged 33 years.

At Sherbrooke, Mr. Harry Langton Gilbert, M.D., F.R.C.S., Eng., aged 34.

At Bedford, Que., on 3rd February, James McNabb Cassels, M.D., aged 48.

On 4th February, at 283 Church St., Toronto, Richard Zimmerman, M. D., L. R. C. P., Lond., aged 36.

On 8th February, at Winnipeg, Albert G. Jackes, M.D., aged 44.

At New Glasgow, N. S., February 12th, George Murray, M.D., ex-M.P.P., for Pictou.

At Toronto, February 13th, John H. McCallum, M.D., aged 47 years.