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Original Communications.

Remarks on Electro-Therapeutics, with cases, by DONALD BAYNES, M.A., M.D., L.R.C.P., E., Lecturer on Diseases of the Throat, Medical Faculty, University of Bishop's College. Read before the Medico-Chirurgical Society of Montreal, February 8th, 1878.

MR. PRESIDENT AND GENTLEMEN,—In my paper for this evening, I propose simply to mention the different kinds of electricity; their different modes of application, and their uses as therapeutic agents. Also, to bring before your notice for discussion some of the cases I have had under treatment, hoping it may awaken fresh interest in this very valuable therapeutic agent.

FORMS OF ELECTRICITY USED IN THERAPEUTICS.

1st. *Static or Frictional Electricity*—The electrical machine for producing this form is very simple, its essential parts being three, viz., the rubber, the rubbed body and the prime conductor, the rubber being usually a pair of leather cushions amalgamated with a paste made of zinc and tin turnings rubbed down with mercury and lard, the rubbed body, a large circular plate of glass, mounted on a glass axle, and turned by a handle between the cushions, and the prime conductor, usually an insulated metal cylinder intended to receive the kind of electricity required. This form of electricity is used for medical purposes in three ways, viz., the electric bath, electrization by sparks and the Leyden jar. The electric bath is of two kinds, electro-positive and electro-negative. The former increases the vital forces, the latter decreases them. In the electro-positive bath the electricity is gathered from the glass-plate on to the prime conductor, while the negative electricity is carried away by a chain from the cushions to the floor. The patient being placed on an insulated stool or chair, is connected with the prime conductor. The whole surface of the patient's body is thus charged with positive electricity, while the surrounding air is rendered negative. If the electric bath be given in a dark room a luminous appearance is produced by the escape of electricity into the air. The electro-negative bath is given in the same way, with this difference: the negative electricity from the cushions is collected, while the positive is liberated and carried to the ground by a chain. The electro-negative is said to have a weakening effect by reducing the natural electricity of the patient, acting like blood letting, the pulse being retarded.

These baths have been found useful in old standing tics, sciaticas, unpleasant flutterings about the heart depending on weak innervation, and tremor of the limbs have been removed, by simply charging a patient as it is called, even when the other forms of electricity have failed.

Electrization by sparks.— The patient is charged in the manner just described as an electric bath. The operator brings his hand near the patient, his hand becomes negatively electric. The negative electricity of the hand combines with the positive electricity of the patient; this produces a flash of light accompanied by a snap, and this is called the electric spark. These sparks may be drawn from the body by metallic conductors, and produce a sharp pricking at the part; if continued the skin becomes reddened, and white wheals are produced. At Guy's Hospital there is a chain or movable wire suspended from the ceiling and connected with the ground, to which is attached a brass ball which slides up and down the wire. This is brought close to the patient, about an inch from the spine; the patient is now charged, and the ball passed up and down in a line with the spine; sparks now pass to the ball and thence to the ground by the wire. In this way a rapid succession of sparks can be obtained. Cavallo has recommended the drawing of the sparks through flannel. If the sparks follow each other rapidly, they may cause slight vibration of the muscles which are close under the skin. This form has been used with success in paralysis, chorea, some kinds of amenorrhœa, and in some spasmodic affections.

The Leyden jar is charged as follows: you hold the jar by its outer coating, and bring the knob which is connected with the inner coating to the conductor of an electric machine in action. The inner coating becomes charged with positive electricity and the outer coating with negative. If these two coatings become connected, neutralization of the two electricities takes place, and the jar is discharged. For medical purposes it is used as follows:—A conductor communicates with the inner surface of the jar to the part to be electrified, the outer surface is connected to the opposite side, a spark is produced and the neutralization of the opposite electricities takes place through the part of

the body between the two conductors. This form is rarely used.

2nd. *The galvanic*, or as it is sometimes called *the constant or continuous current*.—This form is the result of chemical action, or rather decomposition, and is generated in a cell, battery, or pile, where two metals, an electro-negative and an electro-positive, are brought together in an exciting solution. This current produces no shock to the patient, unless broken or interrupted, which may be done either by the rheotome or by an interrupting handle. If weak, the current produces little or no pain; if, however, it be strong, it causes a tingling, burning feeling at the point of contact with the electrodes. If very strong, it becomes unbearable. The characteristics of this form of electricity are comparatively low "intensity" in its action on nerves and muscles, but a large amount of quantity. It produces results on temperature, chemical and thermic, far beyond static and Faradic electricity.

3rd. *Faradic Electricity*.—This form of electricity is of very high tension, having almost no chemical action or any direct effect on the temperature. It produces no burning or tingling as with the galvanic. It produces contractions of the muscles, and has a decided effect on the nerves of sensation and motion. It is an induced current and is of momentary existence, but these momentary currents may be repeated slowly or quickly. It exists only at the moment of making or breaking the galvanic current, or at the moment of making or unmaking a magnetic condition in a piece of metal. Having given a slight sketch of the various kinds of electricity, I shall now mention some rules on the modes or methods in which this remedy is used, as, without a proper knowledge of its administration, more harm than good may be done.

Rule 1st.—The positive pole is less irritating, we therefore place the negative pole in general faradization at the feet or coccyx, or at the pit of the stomach in central galvanization, the positive being applied to the head, neck, spine and other sensitive parts.

Rule 2nd.—In cases where the sedative effects of electricity are indicated, the positive pole is preferable, being less irritating.

Rule 3rd.—Where the stimulating effects are indicated, use the negative pole as being the more irritating.

Rule 4th.—Dose of electricity, *i. e.*, the strength of the current and length of *séance*, depends greatly on the size and quality of electrodes, the method of application whether local or general. A short *séance* of general faradization or central galvanization will have a much greater general effect than a long *séance* of local electrization. If local, a short mild application to the head will produce results (whether beneficial or harmful) that would never occur in one ever so prolonged and strong to the extremities.

Now, not having any definite measure, we to a great extent depend on the sensations of the patient; (*i. e.*) if strong currents are borne without uneasiness they are indicated, if only mild ones are easily borne, use mild. A long *séance* with a mild current is much more beneficial than a short one with a strong current. Sudden shocks, especially with a strong current, often do harm. When using the galvanic current do not allow the electrodes to stay too long in one spot, or a tedious ulceration may be the result. The good effects of electricity may be roughly stated as follows:—

1st. Relief of pain.
2nd. Improvement in the pulse.
3rd. Do do temperature.
4th. Do do digestion.
5th. Do do nutrition.
6th. Increase of appetite.
7th. Quieting effect and tendency to sleep.

Gentle perspiration is an evidence of the proper application of electricity, but profuse perspiration shows an excess of irritation, and indicates that harm has been done instead of good.

If the current be too prolonged or too severe the patient is apt to suffer from disagreeable symptoms, (*e. g.*) dizziness, heaviness, oppression, headache, soreness, exhaustion, and a sort of undefinable nervousness. Messrs. Beard and Rockwell give a very exhaustive article in their work on the differences between the galvanic and faradic currents and the special advantages of each, from which I condense the following:

The advantages of the galvanic over the faradic are:

1st. "A greater power of overcoming resistance. It therefore affects the brain, spinal

cord and sympathetic more powerfully than the faradic; it is usually preferred when it is desired to affect the middle and internal ear, or the retina and muscles of the eye.

2nd. A power of producing muscular contractions in cases where the faradic fails. This is especially noticeable in paralysis, the muscles responding to galvanism when quite unsusceptible to faradism. After treatment by galvanism the muscles often answer to faradism.

3rd. A more potent electrotonic, electrolytic and thermic action. The chemical power of the galvanic current is most markedly seen in galvano-cautery and electrolysis. Its greater catalytic action makes it superior in cases of neuralgia, atrophied muscles, rheumatism, etc.

The advantages of the faradic current over the galvanic are:

1st. By virtue of its frequent interruptions it more easily produces muscular contractions. This advantage is best appreciated in general faradization, the powerful tonic effects of which are largely due to the passive exercise and consequent oxidation and other important changes of tissue that result from the several thousand muscular contractions that take place during an ordinary sitting.

2nd. It produces greater mechanical effects. These are due to its rapid interruptions, not only on the muscles but also on the contractile fibre cells, thus stimulating the circulation and, with it, the process of waste and repair. In this respect its action is similar to rubbing, pounding, shampooing, etc. These mechanical effects are especially indicated in the treatment of diseases of the abdominal viscera, which are supplied with contractile fibre cells, anæsthesia, and general muscular debility, constipation, etc.

The general differential indications may be thus summed up.

The Galvanic should be used:

1st. To act with special electrotonic and electrolytic power on the brain, spinal cord, sympathetic or any part of the central or peripheral nervous system.

2nd. To produce contractions in paralyzed muscles that fail to respond to the faradic.

3rd. In electro-surgery to produce electrolysis or cauterization.

The Faradic should be used:

1st. To act mildly on the brain, spine, sympathetic, or any part of the central or peripheral nervous system.

2nd. To excite muscular contractions wherever the muscles are not so much diseased as to be unable to respond to it.

3rd. To produce strong mechanical effects.

The majority of cases, however, may be best treated, not by one current exclusively, but by both currents either in alternation or succession. The differential action of the two currents may be roughly compared with the differential action of bromide of potassium and chloral hydrate—the faradic current being the bromide of potassium, and the galvanic the chloral hydrate. Bromide of potassium is a safer remedy than chloral hydrate, but there are very many cases where it is powerless, and the chloral acts as a specific, so the faradic is safer than the galvanic, and therefore better adapted for general use, and, for those who use but one current, fulfills a larger requirement; and yet there are many cases where it fails, and the more powerful galvanic current is required. Except in cases where the galvanic current is clearly indicated, it is well to begin with the faradic—just as we use the bromide before resorting to the hydrate. A combination of the bromide and chloral is frequently more effective in producing sleep and relieving pain than when either remedy is used alone, similarly a combined or alternate use of the galvanic and faradic currents will accomplish much more than either used exclusively."

Faradic electricity has been proved lately to be very useful in arresting uterine hæmorrhages, as menorrhagia and post partum hæmorrhage. It has been lately much employed during labor for atony of the uterus, and has been successful in producing strong and regular contractions. This is a very great advantage, as it has no deleterious effect on the child, as is often the case where ergot has been employed. It has been strongly recommended as a means of resuscitating asphyxiated new-born infants, and in cases of drowning.

Electricity may be administered locally for purely local complaints. Where, however, a constitutional effect is required, the general faradization (for the faradic current) or the central galvanization (for the galvanic current) introduced and fully described by Messrs. Beard and Rockwell must be employed.

Localized Electrization.

The object of localized electrization is to confine the direct action of the current, so far as possible, to some particular part of the body. This is accomplished by placing electrodes so that the current in passing from one to the other shall chiefly traverse only that particular part that is to be affected.

There are two general methods of localized electrization—*direct* and *indirect*: Direct where the application is made over the muscle to be excited; indirect where the application is made to the nerves supplying the muscles. In the former, large electrodes are used; in the latter, small pointed ones. The faradic is best for direct; the galvanic, for indirect. In stabile applications the electrodes are kept stationary, in labile, one or both electrodes are moved over the surface.

General Faradization.

The object is to bring every portion of the body under the influence of the faradic current, so far as is possible, by external electrization. This is best accomplished by placing one pole (usually the negative) at the feet or the coccyx, while the other is applied over the surface of the body.

Central Galvanization.

The object here is to bring the whole central nervous system, the brain, sympathetic and spinal cord, as well as the pneumogastric and depressor nerves under the influence of the galvanic current. One pole, usually the negative, is placed at the epigastrium, while the other is passed over the forehead and top of the head, by the inner border of the sterno-cleido mastoid muscles, from the mastoid fossa to the sternum, at the nape of the neck and down the entire length of the spine.

I will now say a few words about the electric bath, as introduced and perfected by Dr. Schweig, which combines all the advantages and benefits to be derived from the various methods of applying electricity, and, in addition, gives the patient the benefit of the warm bath. The good results following the use of the electric bath have, in my experience, far surpassed those of any other mode of application. The bath is made in the form of the ordinary zinc washing baths found in most houses. It is, however, made of wood, slate, marble, or hard rubber; wood is, of course, the cheapest. At the head and foot of the bath carbon plates are let into the wood; these plates are connected by means of a copper wire, which runs along a groove let in the head and foot pieces of the bath to the coping where it communicates with two binding screws, one at the head and the other at the foot of the bath. When a bath is given, a wire is connected from either pole of the battery to the binding screws. If the conductor from the positive pole is connected with the binding screw at the head board, and the negative with that at the foot, we get a descending current. Where an ascending current is required, the reverse of this must be carried out. If we require to localize the current in special parts of the body from one of the poles, what is termed a surface board is used; this is a piece of board about 14 inches long, 5 broad and $\frac{3}{4}$ thick, having a bed cut in it large enough to receive a carbon plate, 5 inches long, 2 wide and $\frac{1}{4}$ thick; through the centre of this board a metallic binding screw is introduced and brought into connection with the carbon, and to this binding screw is attached a piece of insulated wire, which may, as required, be attached to either conducting wire from the battery. The current is said to be centripetal when the surface board is connected with the negative, and centrifugal when connected with the positive pole. The average duration of the bath is about twenty minutes, though the time may range from ten minutes to an hour and a-half. The temperature of the bath may range from 85° to 100° or 105° Fahr. Certain chemicals may be introduced into the bath, which will, under certain conditions, enhance its effect. Iron (tart. of iron and ammonia) is useful in anæmia, chlorosis, etc. Iodine, either as tincture, or in the form of iodide of potassium, is very useful in the absorption of plastic exudations, articular deposits following rheumatism and gout, also in the elimination of lead, in cases of lead poisoning: in these cases about an ounce of iodide of potassium is added to each bath. Extract of malt alone, or in conjunction with iron, has been found very useful in cases of malnutrition and debility. If we wish to obtain counter-irritant effects, mustard or common salt may be added. To render the bath alkaline in some cases of skin diseases add bi-carbonate of

potash, or soda; starch is sometimes a useful adjuvant to the potash or soda.

The general therapeutic effects and uses as described at length by Dr. Schweig may be summarized:

1st. Its value as a diagnostic. — The current makes itself more decidedly, and often even painfully felt, in any part where a morbid condition exists, whether this be of an inflammatory, neuralgic, rheumatic, traumatic, congestive or other nature. It may be compared to tenderness on pressure. In anæsthesia the current makes itself conspicuous by the absence of its normal effects.

2nd. It is an excellent counter-irritant. The amount of counter-irritation can be regulated to a nicety by the intensity of the current. After a bath the back and legs are seen to be quite red. Concentrated local counter-irritation can be obtained by the use of the surface board.

3rd. As a general invigorant and tonic it can have few, if any, superiors. In cases of debility, mal-nutrition, want of energy, etc., the tonic effects are striking and brilliant.

4th. It has great powers as a hypnotic and general sedative. The greater the degree of restlessness, irritability or wakefulness, the more strikingly does the soothing and hypnotic influence of the baths become apparent.

5th. Improved nutrition, as manifested by rapid increase of weight, is a reliable and constant effect of the bath.

Among the diseases that seem to be specially amenable to this form of treatment may be mentioned:

1st. Rheumatism, sub-acute and chronic, with their sequelæ.

2nd. Chorea, or St. Vitus' dance.

3rd. Hysterical affections.

4th. Nervous exhaustion.

5th. Insomnia (sleeplessness).

6th. Anæmia (the cause of numerous morbid conditions).

7th. Paralysis (here very specially the beneficial effects of the bath have been amply proved.)

8th. Many forms of neuralgia.

9th. Articular effusions.

10th. Impotency.

11th. Dyspepsia, constipation and chronic diarrhœa.

12th. Some forms of metallic poisonings, as lead, mercurial, etc.

13th. Very useful in convalescence from acute diseases, chronic headaches, hay fever, uterine and special female complaints.

I will now conclude by mentioning a few cases selected at random from my case book.

I. Hay Fever.—This most trying complaint may be very greatly alleviated, if not altogether cured, by a proper administration of electricity alone; or, when indicated, assisted by medication.

Mr. H. entirely escaped his usual attack during the past summer, having at my advice undergone a systematic course (chiefly of general faradization) during the summer months. He assured me that, in addition, he felt much stronger and more able for his work. The last summer is the first for many years he passed in Montreal, having been usually obliged to spend June, July and part of August either at the sea-side, or at one of the mountain retreats frequented by victims of hay fever. I may mention here that I was successful during the past season in cutting short, or modifying in several instances severe attacks of this disorder. Some were treated by central galvanization (as recommended by Dr. Beard in his book on hay fever), others by the electric bath.

II. Aphonia.—Miss G. B., aged 18, came to me in April, 1876. Had been in somewhat a debilitated condition for some time, menses irregular, bowels very constipated. About three months previous to her visit to me she had caught a severe cold, which resulted in complete loss of voice, so much so that she carried a slate and pencil as a means of communication. A laryngoscopic examination revealed paralysis of the vocal cords; on attempting to phonate, the right remained completely motionless, and the left did not quite approach the median line. I applied one pole of a faradic battery to the "pomum Adami" by means of Mackenzie's necklet, and the other directly to the vocal cords by means of Mackenzie's laryngeal electrode. The effect was instantaneous, her voice being completely restored. I then ordered her a tonic containing iron and nux-vomica, and she shortly regained good health.

Miss S., 23 years of age, a saleswoman in a shop, consulted me in June, 1877, for a functional aphonia following a severe cold. In this case

there was a good deal of congestion of the cords. I applied electricity, as in the former case. After the first application her voice was somewhat restored. I touched the cords with a solution of chloride of zinc ʒ ss. to the ℥ i; and gave her a benzoin inhalation. The following day the congestion was a good deal less. I again applied the electricity, and repeated the zinc solution. In less than a week her voice was quite restored, and has remained strong up to the present time. I may mention that in the former case the young lady had been very actively treated by means of applications of nitrate of silver, mustard plasters, iodine inhalations and purgatives *ad libitum*.

III. Chorea.—In 1874 I saw a case treated by means of the electric bath. The child, about 10 years of age, was brought to Mr. Adolphus, proprietor of the Queen's hotel electric baths, and so bad was the case that a bag had to be made into which the child was placed, and the bag tied round the neck so that it could not hurt itself against the sides of the bath. The improvement was rapid, the contortions being much less even after the second bath. In less than a month the child was perfectly cured.

IV. Lumbago.—Col. B., consulted me in June, 1875, for lumbago. He had been suffering nearly a week, and was scarcely able to cross the room, so great was the pain. I applied the galvanic current for about 15 minutes over the lower part of the spine and thighs. This application gave great relief. I repeated the galvanism next day. He was now so much improved that he could walk with a stick; three more applications so completely cured him that he was able to take his daily ride and walk without any pain or inconvenience.

Mr. D. had been troubled for some time with aching pains in his back. He had tried the usual remedies without much, if any, benefit. He was recommended to try the electric bath, and for that purpose came to me in September, 1877. He took in all four baths, marked improvement followed the first bath; and he declared himself to be perfectly free from pain after the third. He has had no return up to the present time.

V. Deficiency of Secretion of Milk.—Mrs. H. consulted me in February, 1877, about the entire absence of milk in her right breast. This was the third time she had lost the milk in this breast, the result of previous abscesses; three applications of the faradic current resulted in as full a supply of milk as in the other. I may mention here that the galvanic current is very efficacious in curing sore nipples.

VI. Paralysis.—1. James L. fell, September 8th, from a window in St. Catherine street, some 20 feet from the ground, striking the left side of his head. The child was taken up insensible; pupils dilated. Ordered grs. x of calomel, followed by an injection, and hot cloths to its head. As the child seemed in great pain, and kept crying continually, I gave it small doses of tr. of opium. On the ninth child was quieter; ordered another injection and ice cloths to the head. On the twelfth the child became sensible. It was now noticed that he was unable to speak, and that its leg was paralysed. There was a good deal of anæsthesia in the paralysed limb; no response to the faradic current. *Treatment.*—Daily applications of both galvanic and faradic currents. Sept. 21st, able to stand; 22nd, speech returned; 23rd, walked alone; 26th, able to run a little; dismissed, cured, the first week in October.

2. Frank M., 14 months old; strong, well-nourished child, sent me by Dr. Kennedy. First seen, September 24th, '77, left leg was paralysed, muscles flabby, limb was always cold, and smaller than the right. Previous history: Sept. 14th, child woke up, crying, after its morning nap; was very feverish and vomited several times. The mother gave it a dose of oil; towards evening child seemed better. The next day the mother noticed the child's leg was paralysed. Supposed cause of the paralysis was cold, as the child was sitting on damp grass the day before its illness. There was no response to the faradic current. *Treatment.*—Galvanic current, positive pole to the lower part of the spine, negative applied to the entire length of the limb. Early in September the muscles began to answer to the faradic current; a fair return of sensation; temperature of the limb better. Continued galvanism, and, in addition, gave faradic baths. In October the leg had increased in size, and was easily kept warm. The child now began to move the leg, and was able to creep and stand in November. December, leg same size as right; temperature good; able to walk short distances; dismissed, cured, towards end of December.

3. Miss M., aged 24. She had been in the habit of taking Epsom salts daily for more than

a year. Caught a severe cold towards the end of December, '77, which resulted in spinal congestion, for which she was attended by Dr. Roddick, who sent her to me Dec. 13th, 1877, for electrical treatment She was then complaining of numbness of both legs, (the numbness extended as high up as the lumbar vertebræ,) weariness on the slightest exertion, and considerable difficulty in locomotion; appetite bad, bowels constipated, feverishness and restlessness at night. Treatment, electric baths, 15 to 20 minutes with the galvanic current, followed by 10 minutes with the faradic. She took in all six baths, one every other day, when she returned cured to her occupation as saleswoman in a shop.

VII. Post Partum Hæmorrhage.—1. Dr. Geo. A. Baynes has furnished me with the following case: Called to see Mrs. D., a thin delicate woman. She had been in labor for some 19 hours. On examination found the os uteri fully dilated, head presenting, the anterior diameter somewhat shorter than normal. Her pains were very feeble and far between, seemed very low. I gave her two or three doses of fluid extract of ergot which produced little or no effect. I then applied the forceps and delivered the child; the placenta came away. Shortly after severe hæmorrhage set in, the uterus failed to contract under the application of cold, ice, etc. Mrs. D. fainted. I had sent for my battery, which now arrived. I gave the nurse one pole to apply over the abdomen, and taking the other in my hand passed it into the uterus, which immediately answered to the stimulus and contracted firmly. I withdrew my hand and applied both poles for a few minutes to the abdomen over the uterus. There was no recurrence of the hæmorrhage, and the uterus remained firmly contracted.

2. Dr. Perrigo sent me the notes of the following case: Was called by Madame Fuhrer to see Mrs. S. The labor had been an ordinary one; however, soon after the removal of the placenta, flooding set in. Ergot had been given and ice had been introduced into the uterus, but without the effect of producing permanent contractions. On my arrival I found the patient much exhausted; exsanguine, and the uterus was relaxed. I immediately applied the faradic current to the abdomen over the uterus, this was followed by a temporary contraction. The uterus, however, again relaxed. I now introduced one pole into the uterus itself and applied the other to the abdomen, this resulted in the uterus becoming firmly and permanently contracted. The woman made a good recovery.

VIII. Atony of Uterus.—Dr. Geo. A. Baynes gave me the following notes of one of his cases:

Mrs. D. M., aged 34; small and rather delicate woman; former confinements tedious, owing to the want of regular and strong pains. When called in on the present occasion I found the os uteri fully dilated, and the head well advanced; nothing seemed to be wanting but a few good expulsive pains. She had been in labor for many hours. Her pains were feeble, recurring at long intervals. I determined to try faradization, and applied a medium current for about two or three minutes. I then waited for four or five minutes, and again applied the faradic current. The uterus began to respond to the stimulus, and acted strongly and regularly; a few minutes afterwards the child was born. The woman made a good recovery.

In many uterine irregularities and troubles electricity has proved to have been of great value.

I have had very favorable results from its use in neuralgic dysmenorrhœa, amenorrhœa, etc.

IX. Toothache.—I have several times afforded great relief by placing a needle connected with the negative pole of a galvanic battery in the hole of the carious tooth, the positive being placed on the cheek and passing a gentle current through for a minute or two. Two or three applications, allowing a few minutes rest between each application, will, as a rule, cure the toothache. The patient will not be likely to suffer from a return for some weeks, or months.

X. Debility.—Mrs. F. L., married, suffering from obstinate constipation and severe leucorrhœa, had, from over-nursing, fallen into a very low, depressed and nervous state. She told me she felt thoroughly unfit, mentally as well as physically, either to read, write or attend to the ordinary duties of the house. She had gone through the usual routine of tonics before I saw her. I began treatment with the electric baths, in April, 1877. After the third bath she began to improve, and in June, 1877, was dismissed cured. She was then able to take long walks,

two or three miles; had quite regained her mental vigor.

J. B., clerk, aged 45, consulted me in July, 1877, for debility and cough. Previous history, had been some years in India, where he had suffered from various malarial fevers, etc. During the winter of 1877, he had a severe attack of typhoid fever. He was hardly convalescent when he was again laid up with an attack of pneumonia. On his recovery he went away for change of air, and to a certain extent regained his former strength. The office work, however, soon began to tell, and when he came to me in July, he was very thin, had considerable stoop, a trying cough, moist rales which were distinctly heard while talking to him. His appetite was bad, and on his return from office used to throw himself down on the sofa and lie there till he went to bed. I gave him electric baths, one every other day at first, then one twice a week, and lastly, one a week. He took, in all, about 18 baths. His appetite began to improve after the first bath. After he had taken three, he told me his cough was nearly well, and his energy for work was much better. His improvement was very rapid. after he had finished his course of baths he said he was stronger and in better health than he had been since his Indian service.

I could go on multiplying case upon case, were there necessity, where I have used electricity with benefit. I have not touched upon the use of electricity in cancer, nor its electrolytic action in tumours, nor galvanic cautery, upon each of which a long paper might readily be written.

Finally any one who knows anything of the action and effects of electric baths on the following conditions, will at once acknowledge their great use, viz.: astheniæ, debilitated conditions generally, convalescence from acute disease, many kinds of chronic headaches, various conditions of marasmus and malnutrition, &c.

In conclusion, I would recommend any who may wish to try electro-therapeutics to be careful in the selection of their batteries. I have tried a great many, English, French and American, and must in fairness say that those manufactured by the Galvano-Faradic Mfg. Co. of New York have given me the greatest satisfaction. They are perfectly reliable if properly looked after, convenient in size, reasonable in price, easily managed, simple in construction and handsome in appearance.

Diphtheria attacking the Funis Umbilicalis. By THOMAS A. RODGER, M.D.

Having heard a few of the members of the profession give expression to doubts concerning the contagiousness of diphtheria, in fact, boldly declaring that the disease was not communicable by actual contact, I would beg leave to bring to notice the following case as being one fully illustrating that the disease is contagious. We read of this affection attacking locally different parts of the body, the mucous membrane of the mouth and nose, the pharynx and larynx, and also open wounds; but I have not yet heard of there having been a case of genuine diphtheria attacking the "funis umbilicalis." The present outbreak among us of diphtheria would seem to have made itself manifest, more particularly among children of age ranging from three to twelve years. But what I wish more particularly to notice is that younger children, infants, in fact, are not exempt, notwithstanding that we are led to believe to the contrary, for Oertel tells us that the infant organism seems to be not at all susceptible to the disease.

On the 15th of November, 1876, the subject of this case was born, a strong, healthy looking child. Being in attendance at the confinement, I was making my usual visit on the third day, when the nurse informed me that the child was ill, that it had been fretful and restless all the night, and had refused the breast, notwithstanding that up till this time there had been no trouble. A dose of castor oil had been given and had operated well.

Our attention is apt to be drawn so frequently to such cases, and usually about such trivial affairs, that I contented myself with ordering some simple carminative, with instruction, that if the case got worse, to make it known to me. I heard nothing further until my visit on the following day, when I found the case no better. Passed the night very restless, still refusing the breast; temperature, 102°; breathing hurried; pulse, frequent; in fact, great excitement of the whole nervous and circulatory system, such as you expect as the approach of some form of the exanthemata.

I had the infant undressed and found in the immediate neighbourhood of the funis a highly erythematous condition, and quite firm to the touch. On removing the portion of linen contain-

ing the cord, rather a strange sphacelous-looking mass presented itself, in circumference about the size of a twenty-five cent piece, about a quarter of an inch in thickness, and of a greyish yellow colour, but no perceptible odour. The mass seemed to spring from the connective tissue, and could be raised quite freely from the surface of the abdomen, the cord itself could be seen projecting from the centre.

I was indeed at a loss, just at the moment, to know what condition of things I had to deal with, for it must be borne in mind that at this time diphtheria was of rare occurrence. On reaching home it occurred to me that I had seen a case of croupous diphtheria in that same terrace of houses a short time previous, consequently I returned to the patient and carefully examined both throat and nostrils, but no trace of disease was discernible. The next question was, how came this condition of things? On enquiring, I ascertained that the person who had washed the infant, and had also wrapped up the cord in the portion of linen, was the same individual in whose house the case of diphtheria had occurred two weeks previous. This, I felt satisfied at the moment, was the probable source of contagion, and time would, in all probability, confirm the diagnosis that the case was diphtheria. Beyond cauterization, and the application of some acetate of lead lotion, nothing further was done, as it was painfully evident that the case was hopeless. Early the following day I was summoned to see the child, but only to witness, what very shortly transpired, viz., death by septicaemia. In confirmation of the diagnosis in this case, the disease appeared two or three days later, in two other members of the same family, aged respectively three and a half years and six years, the former having a pretty severe attack, followed by general paralysis, which, in course of time, yielded to appropriate treatment.

Point St. Charles, Montreal, Feb. 2, 1878.

Progress of Medical Science.

CLINICAL LECTURE ON FRACTURES OF THE FEMUR.

Delivered at Bellevue Hospital, N. Y., Nov. 7, 1877. By Frank H. Hamilton, M.D. Reported by P. Brynberg Porter, M.D.

Gentlemen,—On entering upon my term of service at the Hospital on the 1st of the month, I found ten cases of fracture of the shaft of the femur in the wards. A number of these I propose to bring before you to-day; but, in order that you may properly appreciate the principles involved in their treatment, it will be necessary for me first to call your attention briefly to the progress which has been made in the treatment of this class of fractures during the last hundred years. My remarks, you are to understand, will be limited exclusively to fractures of the shaft of the femur, and will be still further limited to fractures of this character occurring in the adult. In fractures of the thigh in children there are material differences, to which it will be impossible for me to allude, for lack of time, on the present occasion.

In the first place, I wish to remark that fractures of the shaft of the femur in the adult are almost invariably oblique,—not moderately so, but extremely oblique, as a general rule. It is, therefore, impossible to make the fragments set, in the ordinary acceptation of the term; and they can only be maintained in position by extension and counter-extension. The powerful muscles attached to them necessarily make them overlap each other, giving rise to the hideous deformity which is seen in the two specimens that I now show you. In such a case the bulging noticed is always equal to twice the thickness of the shaft, even if there should be no callus to make it still greater. This, then, is the beginning of our study of fractures of the femur: they are oblique.

Now, how is this powerful action of the muscles of the thigh, causing the fragments thus to override, to be counteracted? Until the latter part of the last century (from the remotest periods, as far as we have any knowledge), surgeons were in the habit of employing a simple long straight splint. By making extension and counter-extension they pulled the fragments out into position, and then applied the splint to the side of the limb with bandages. Such a long splint I now show you, and this particular one was handed to me by one of the surgeons in Stonewall Jackson's army, where he was frequently obliged to have recourse to it. Towards the close of the eighteenth century, however, Pott wrote a short treatise in which he showed that there had always been considerable shortening after fractures of the thigh, explained the reason why this was so, and contended that the muscular contraction giving rise to it could be overcome by keeping the limb in a flexed position and thus relaxing the muscles. This publication made an immense impression in the medical world, and, as a consequence of it, the double inclined plane came into general use in the treatment of this class of fractures, both in England and America; though it was never adopted by the French and German surgeons. The theory was specious, but unsound. It has its advocates even up to the present day, however, and a few leading surgeons in this country, among whom I may mention the distinguished Nathan R. Smith of Baltimore, still prefer the double inclined plane to any other method of treatment.

Almost the entire surgical world, however, has returned to the use of the straight splint; but very important modifications have been made in it. The first of these was introduced by Boyer, and

since his time almost innumerable devices, some of which I show you here, have been suggested in connection with it. Most of the modifications involved some form of screw by which extension could be made, and also some appliance for making counter-extension. The way of getting hold of the foot in order to keep up extension was a very important matter, and always gave a great deal of trouble. A few of the various devices which have been suggested I now exhibit to you. They are all apparently good; but, however carefully the foot-band might be padded, they all invariably caused excoriation and ulceration when any considerable traction was maintained for any length of time.

As to the matter of counter-extension, that was almost exclusively made by pressure upon the perineum, where the tuberosity of the ischium was the *point d'appui*. The best of all these appliances was the flat perineal band, on account of the comfort with which it could be worn by the patient. But what has been the history of these? Every old surgeon can recall a number of cases, especially where the patients were delicate females, in which a deep ulceration resulted from the pressure made by the perineal band.

It will thus be seen that surgeons labored under two great difficulties, viz., in the way of making suitable extension and suitable counter-extension by means of the extending band and the perineal band. In actual experience it was found to be altogether unsafe to employ a traction force of over ten pounds, and this was usually quite insufficient for the purpose required.

It is to the late Dr. Crosby, of Hanover, New Hampshire, that the honor must be given of having made the first great step in the improved treatment of fractures of the femur. About twenty years ago he conceived the happy device of applying strips of adhesive plaster to the sides of the leg for the purpose of making extension, and by this means we are now enabled to employ with impunity a weight of twenty-five pounds, if necessary. This was indeed a great triumph. For the next great step in the treatment we are indebted to a surgeon of Schenectady, to whom it occurred that the necessity of having a perineal band might be obviated by elevating the foot of the bed. When this was first suggested to me it was thought to be necessary to have the foot of the bed raised about two feet from the floor, and in the first case in which I made use of the plan the patient complained that he felt as if he was going to have apoplexy, from the tendency of the blood to flow to the head. I was not, therefore, very favorably impressed with the idea; but the method was taken up with enthusiasm by Dr. Moore, of Rochester, and, as it was before long demonstrated that it was only necessary to elevate the foot of the bed four inches, the measure was adopted by almost all surgeons, and the perineal band was soon abandoned altogether. It is now many years since I have seen a perineal band in use in this hospital. One caution I will mention in raising the foot of the bed from the floor. It is always necessary to have the pillow under the patient's head alone; for if it is under the shoulders also, instead of having the whole body act in the way of making counter-extension, you will only have the portion from the pelvis down.

Thus, then, you see, we have at our command reliable means for both extension and counter-extension without causing inconvenience or injury to the patient. But in making extension we are not able to go beyond twenty-five pounds' weight, for the reason that the ligaments about the knee-joint become painful when a traction-force exceeding this is applied. You know that in standing, however erect, the knees are never kept perfectly rigid and straight, but are always flexed to a slight extent; and if a greater weight than twenty-five pounds is employed when the body is in a recumbent position, the strain upon the ligaments soon becomes unbearable. Twenty-five pounds is the maximum weight to be used, and is ample for all practical purposes. Oftentimes a considerably smaller weight is quite sufficient; and my rule is gradually to increase the amount of extension until the patient cannot bear any more with comfort.

To the Germans we are indebted for many important advances in both medicine and surgery; but in one instance the American surgeons followed the teachings of the German authorities and went a step backwards. This was by the adoption of the plaster-of-Paris bandage in the treatment of fractures of the femur. At first it was supposed to be necessary to make counter-extension by pressure upon the perineum, and, as a consequence of the plaster treatment with this in view, I have seen an enormous ulceration result, extending for several inches around the perineum, and as deep as my hand. When this idea was abandoned, the attempt was made to obtain counter-extension by means of the large muscles upon the back of the upper part of the thigh; but in a person of small muscular development this was utterly impossible to do, and in any case the plaster application soon became so loose as to be utterly valueless in this respect. In this hospital I saw more shortening and more crooked limbs after fracture of the femur, while the plaster treatment was employed, than I ever saw before or have ever seen since. What is more, I saw three deaths actually result from it, and these have been carefully recorded in the latest edition of my work on Fractures and Dislocations. I tell you, gentlemen, the introduction of this treatment was not one step, but several steps, backwards. I do not speak from mere hearsay, but from actual experience; for for three or four years I treated every alternate case occurring in my service with the plaster bandage, and I always observed the result accurately. Now, I am happy to say, the method has fallen into general disuse here, almost all of my colleagues in the hospital having abandoned it. If you attempt to employ it in country practice, I feel quite sure you will give it up too, after having made trial of it about twice.

Now we are prepared to look at some cases in process of treatment; and in the first one which I show

you, you will observe that no side-splint is employed. This is sometimes unnecessary, but in many instances it forms an essential feature of the treatment. Instead of one pulley and one weight, there are two of each—the two cords extending from each side of the foot-piece. This modification was suggested by Dr. Monroe, of the House staff, with the idea of preventing external rotation of the limb; and it does accomplish this to a certain extent. In this case, a plaster-of-Paris bandage has been applied over the adhesive strips, in order to keep them more firmly in position.

In the second case before you, there is also no side-splint, as you will perceive, and rotation is guarded against not only by having two weights and pulleys, but also by a little apparatus contrived by Esmarch. This consists of a cushion on which the foot rests, and which is fastened to a wooden cross-piece for the purpose of holding the limb steady, and the cross-piece is movable upon a frame when the position of the foot is changed. We have, however, a simpler means, I think, of accomplishing the same result in a better manner, and this I will show you presently. In this case, silicate of sodium instead of plaster-of-Paris, as in the last, is applied over the adhesive strips upon the leg. The patient has now been under treatment for more than seven weeks, and yet I am still able to detect a litte crepitus at the seat of fracture. As he is a young man and apparently in good health, the process of repair would seem to have been going on rather slowly; but I have no doubt that a good result will be obtained in the end. In my forty years and more of practice I have never had a single case of non-union occur in my own hands, and I have certainly treated a pretty large number of these fractures; though I have seen some in consultation. I do not say this in any spirit of boasting; but such has been my good fortune.

I now pass to the third case, the treatment of which is a typical example of what is known as Buck's method. Dr. Buck has done a great deal for the treatment of these fractures, but the various improvements which have been adopted in its most improved form have been suggested by so many surgeons that I think it is hardly just that it should be called by his name, and I would suggest the "American plan" as a more appropriate title. You observe its prominent points: the long splint with its lower extremity fitted into a light wooden framework to hold it steady, and its upper portion bound to the side of the chest by a wide roller-bandage; the foot-piece (to which the weight is attached by the cord passing over a pulley) sufficiently wide to prevent any pressure being made upon the external or internal malleolus; the adhesive strips extending up to the knee, and covered by a roller to keep them in position; the four short side-splints about the thigh, covering the seat of fracture; and, lastly, the foot of the bed elevated four inches above the floor, for the purpose of making counter-extension. The adhesive plaster should not pass above the knee, for if it reaches higher than that, it will be likely to do more harm than good, by involving some of the muscles which are attached to the upper fragment of the femur. For the four independent side-splints, within the long one, we are now in the habit of using felt, because it is a light material, and when once moulded to a part retains its shape permanently. They are kept in position by a bandage, and can be removed at pleasure for the purpose of examining the seat of fracture, or for any other reason that may necessitate it. They are extremely useful in preventing looseness of the limb. As a general rule, I regard the long splint as the most essential requisite for making a straight thigh, and it acts in two ways: *first*, by preventing eversion, and *second*, by keeping the whole body straight. In its simplicity and efficiency it is far superior to the plaster-of-Paris bandage. Theoretically, the latter, after being once applied, is supposed to remain *in situ* until the case is discharged cured; but practically it is found to get loose in a week, and in two weeks it becomes positively necessary to remove it and apply an entirely new dressing, which involves no inconsiderable amount of labor. This, of course, has to be repeated about every fortnight until the end of the treatment. Here is a little boy upon whom the plaster was applied only a few hours ago, and, though it was very carefully and thoroughly done, you will observe that I can already get my hand underneath the part of the bandage which passes around his body. In the course of a week the whole will be so loose as to be of no practical use whatever.

In all the cases which I have shown you there will probably be some shortening, varying from three-eighths to one-half of an inch; for in fractures of the femur more or less shortening is the rule, and not the exception. Some writers would have us believe that naturally in about every third man one lower extremity is longer than the other; but this is certainly not the case, for were it so this disparity would very frequently be corrected by the occurrence of a fracture. In reality, however, I find, that in about nine out of every ten cases one limb is slightly shorter than the other after my treatment for fracture.

The next case which I shall shew you is a young man who has had one of his thighs fractured twice. The first time he was treated by some other surgeon, and the last time by myself, quite recently, at St. Francis' Hospital. It is necessary that we should be very accurate in making measurements after fractures of the femur; and my method is as follows: Placing my thumb-nail upon the ring of the measuring-tape, I do not put it directly upon the anterior superior spinous process of the ilium, but underneath the latter, upon the tensor vaginæ femoris muscle, and then press it firmly up against the bone. The lower end of the tape is now passed to the external malleolus, and in the case before us I find that the limb which has sustained the two fractures measures thirty-four inches, while the uninjured one measures thirty-four and a half inches.

The patient tells me that a day or two ago, while making unusual muscular exertion, he heard some-

thing crack, and experienced a sensation of pain and weakness at the seat of the recent fracture. This was no doubt due to the fact that the callus, being still new and tender, gave way to a certain extent; and it will be necessary for him to remain perfectly quiet for a few days, in order that firm union may again occur in it.—*Phil. Med. Times.*

ON THE MANAGEMENT OF THE NIPPLES.

Dr. Samuel Sloan, Assistant Physician-Accoucheur to the Glasgow Lying-in Hospital, describes (*Obstetrical Journal of Great Britain*, Jan., 1878) his treatment of sore nipples as follows:—

My plan, when the nipples have unfortunately felt sore, is to carefully wash off the milk, after the child quits the breast, with tepid water; then to wash the nipple with weak spirit lotion and glycerine to prevent drying; or, if the excoriation should be more advanced, some astringent is added, as tannin or a weak solution of nitrate of silver. To protect the nipples from friction against the dress, *if the part be not inflamed*, I order a properly constructed nipple-shield, and occasionally apply a mild ointment, as oxide of zinc, to protect the skin from the repeated application of the watery solutions. If the nipple be retracted, or in any way difficult for the infant to seize, I advise that it be gently drawn out by the breast-pump, of which the best is the green ball breast-exhauster; and, if still painful when the child is applied to the nipple, an artificial glass nipple with India-rubber teat must be *at once* applied. Of this latter apparatus I would add that it is of the utmost importance to secure one of a proper shape; as, if too narrow, constriction of the nipple takes place, causing occlusion of the lactiferous ducts; and, if too long, so much of a vacuum is produced between the extremity of the nipple and the mouth of the child that it is generally impossible for the child to draw the milk into the teat. The teat also ought not to be long, as it then only serves to tickle the fauces or the child. It is thus an important matter, in ordering one of Maw's glass nipple-shields, to secure a proper fit for the particular case: as it is advisable that the child's temper should not be tried in vain attempts to extract the milk. Besides this the teat ought to be carefully cleansed from the composition which covers and impregnates it, as the smell and taste of this material may disgust the child so much that it may refuse to make another attempt. This unsavoury material may be removed by soaking the teat in whisky and then washing it. Before applying the child to this artificial nipple the latter ought to be filled with some of the mother's milk; or, if this is not practicable, with sweetened milk and water. Some children take so kindly to this artificial nipple that it is difficult, after being long accustomed to it, to persuade them to use the mother's nipple again. But, should only one nipple be affected, this will not readily happen, *especially if the artificial teat be small enough.* Of artificial nipples there is a great variety, but to me the one described above and sold by Maw seems to most efficiently protect the nipple; though the shield and teat in one piece, made of India-rubber or other soft material, as softened ivory, will make suction easier for a weakly child, if it can be borne by the mother. There is, however, with its use considerable compression of the nipple by the child's gums. A good artificial nipple has yet to be devised. If the nipple-shield can be borne, and the child can be coaxed to use it, there will be little difficulty in curing the nipples on general principles. In the event of excoriation of the nipple continuing after this attempt with the artificial nipple, and ulceration setting in, there remains no course but to take the child at once from that breast till the part is sufficiently restored to permit of its reapplication. And here the careful use of a good breast-exhauster is important. For, should the breast become engorged whilst the nipple is tender, there is every prospect of abscess of the breast taking place. In my experience, no matter how tender the nipple may be, a careful regulation of the compression of the ball by the hand, with occasional relaxation of the nipple to prevent occlusion of the lactiferous tubes, will always result in the almost painless removal of the milk; though, should the breast be hard and yet no milk come, gentle friction at the periphery of the breast may be required to expel the milk from the gland proper into the lactiferous reservoirs under the areola, whence the breast-exhauster will readily withdraw it. It will now be a comparatively easy matter to heal the nipple, since the first step in treating a disease is to remove the cause; the impracticability of doing this rendering the treatment of the nipple so unsatisfactory. If there be ulceration, careful washing and drying of the nipple, and the application of solid nitrate of silver *to the part affected only*, will generally suffice. This treatment by a "tough caustic point" is, when combined with the use of the nipple-shield, a certain cure of the fissures which occur around the base of the nipple. If the part be inflamed, sedative applications or poultices will of course be the first indication. Should the affection of the nipple arise from the aphthous condition in which we sometimes find the child's mouth, the application of borax and glycerine, or chlorate of potash dissolved in glycerine, is the proper treatment for the nipple as for the mouth. I think it wise to avoid, in the selection of remedies for the nipple, any medicine which may injure the child, if sufficient care be not

taken in its removal before the next application of the child to the nipple. Perhaps it may suffice to point out, regarding some recent investigations which have been made as to the quality of the milk as a factor in the production of sore nipples, that, where one nipple only is affected, this condition of the milk can have only a very limited effect as an exciting cause.

It is pleasing to pass from the too often disappointing treatment of tender nipples to consider the possibility of having the nipples perform their natural functions without the usual morbid results. In the lower ranks, from which a maternity hospital generally derives its patients, tender nipples are rare, since the habits of this class of society, and the more or less exposure of the nipples, in their case, to the tonic effects of atmospheric influence, will give less sensitive, because more natural, nipples. I have made inquiry at our hospital here, and I find that, out of every twenty women confined in it during the last two years, not more than one has suffered from sore nipples. This, it will readily be acknowledged, is a result much more favourable than we have in private practice. It has been customary to order, as a prophylactic, weak spirit and water or other mild astringent, but I have seen no evil result from the application of stronger astringents. As an astringent, however, especially if strong, is likely to cause a hardening only, and not a toughening of the nipple, we may have this organ cracking as soon as the outer film of hardened cuticle is removed, on the first application of the child to the breast. To obviate this I am in the habit of ordering the admixture of glycerine with the astringent, and the occasional application of some fatty substance, as lard. The selection of the particular astringent is, of course, of importance; but the thoroughness with which it is applied is more so. The solution I generally order is made up thus: A large teaspoonful of dry tea is put into a two-ounce vial, one ounce of brandy and a quarter of an ounce of glycerine (Price's) are added; and, after a few days, with occasional shaking, the solution is ready for use. For two or three months previous to parturition the nipples should be thoroughly washed every night with cold water and glycerine soap, dried, and the above solution carefully brushed over the nipple, but especially around the base and into the apex. This is left on all night, and, in the morning, the lard is rubbed well in. I have frequently used glycerine of tannic acid, but have come to regard it as not sufficiently powerful.

During this treatment the dress ought to be loose; and, if the nipples are at all retracted, they ought to be drawn out occasionally by suction or with the fingers and thumb. A circular piece of some unirritating material, with a hole in the centre, might be used in severe cases.

When the child is born, and before I leave the house, I examine the nipples and breasts. If the latter are flaccid I would prefer not to put the child early to the nipple; and, when the milk has appeared, I advise the application of the child at intervals of not less than two hours, and to both nipples at each application, giving careful instructions against letting the nipple remain in the child's mouth after it has emptied the breast, and especially against allowing it to sleep at the breast. The nipple is to be moistened with water or saliva before applying the child to it; and, when the infant quits the breast, the nipple should be washed with a mild astringent and antiseptic solution with glycerine. The mixture I prefer is as follows: A teaspoonful each of whisky, tincture of arnica, and Price's glycerine in a wineglassful of cold water. The nipple, as soon as the infant leaves the breast, is washed with this and partially dried, and a nipple-shield at once applied to protect the nipple from friction against the dress. One of the best nipple-shields is Wansbrough's; but, after using it for some time as it is sold, I had to discard it, on account of its keeping the nipple, in some cases, too moist, and softening the cuticle; certainly a great objection to its use. To prevent this, however, it is only necessary to pierce it *over the whole of its extent* with a large needle from within outwards; and, should the nipple be scalded from insufficient piercing, the rectifying of this error will suffice of itself to remove the inconvenience. I have little experience of other nipple-shields, though they may be made from a great variety of materials, and some of them might prove more convenient than Wansbrough's, to which another objection is that, though it should fit the nipple when first applied, the heat of the breast afterwards softens it: it then becomes corrugated and flattened, and thus affords little protection to the nipple. These objections could not apply to vulcanite nipple-shields, one of which, for trial, I have had prepared for me and pierced by Mr. Joseph Hilliard. Though used, I believe, in America, I do not find that they are known to any extent in this country. In using nipple-shields it is advisable to have them suspended round the neck by a ribbon; and care should be taken that they are frequently washed with soap and water; and if ointments are being used with them, a strong tooth-brush will be found serviceable to cleanse out the holes. Believing as I do in the importance of protecting the nipples in any prophylactic treatment, I advise, where the expense of good nipple shields is a consideration, the use of a small circular piece of gutta percha tissue, also pierced. But I suspect that, in such cases, unless care be taken to keep the gutta percha,

and the part over which it is applied, clean, pustules may form which might lead to inflammation in the deeper portion of the breast. But this need not happen; and patients have often informed me that the simple gutta-percha tissue thus applied is a considerable relief, especially when the nipples are tender. To supply the natural unctuous matter of which sucking deprives the nipple, I order the application of some simple ointment, as fresh oxide of zinc; glycerine soap and tepid water easily removing it before the child goes to the nipple.

The foregoing measures, if carefully carried out, I find, as a rule, sufficient to prevent tender nipples in cases where, from the sensitive temperament of the patient, such would probably have resulted; and that this is the case is, I think, borne out by the fact that, when the nurse leaves, and the prophylactic treatment of the nipples is more or less neglected, instead of being gradually left off, I have noticed in many cases that tender nipples begin, and this after an interval of four or more weeks of immunity from sore nipples.

To those who have been disappointed in the results of their treatment of sore nipples, and who have not put the prophylactic treatment to the test, I would strongly recommend a fair trial of the plan which I have briefly sketched.

THE TREATMENT OF SPERMATORRHEA AND IMPOTENCE.

One of the first and most important matters to be attended to is to relieve the constipation. But do not attempt to do this by means of cathartics, for they will give rise to a still greater relaxation than already exists. It is necessary, however, that the bowels should move daily, and the most satisfactory method of doing this is to have an enema of cold water administered every morning. This will produce a normal evacuation from the bowels, and at the same time will stimulate the blood-vessels and the surrounding parts to a more vigorous contraction, and accelerate their return to the normal condition. At first these injections may give rise to unpleasant sensations and perhaps to slight pain, but their continuance will do no harm whatever; on the contrary, they will be followed by marked benefit in most cases.

Derangement of Digestion.—You will next turn your attention to the stomach. The patient's appetite usually is poor and very capricious, and food of almost every kind seems to give rise to dyspeptic symptoms. A question arises just here. Some textbooks direct you to refrain from ordering articles of food which increase the formation of seminal fluid and excite erections. This is a mistake. Do not pay the slightest attention to such advice, but recommend such a diet as will elevate the vitality of your patient and bring him up to the normal standard. Give him oysters, eggs, milk, beef, mutton, and every variety of food which improves nutrition, and do it independently of any apparent increase in the number of emissions.

Shall Alcoholic Stimulants be withheld?—The question will arise, shall we permit such patients to partake of alcoholic stimulants? By nearly all practitioners these are discarded entirely, but there is an exception to this sweeping rule. The stomach in its debilitated condition may require some stimulant to arouse it into action, and so assist in the digestion of the oysters and other articles of food recommended. It is therefore well, in most cases belonging to this class, to prescribe some mild stimulant, such as claret, for it will promote good digestion without at all exciting inordinate desires or increasing the seminal emissions.

Bathing.—Another important adjuvant to the treatment already advised is the use of water in various ways. Direct your patient to take a cold sponge-bath every morning, unless it gives him such a chill that brisk friction does not bring about a free and full reaction. Never order a cold shower-bath. The patient will derive great benefit from sitz-baths taken at night, three or four times a week. He should not remain in the first one more than five minutes; the second bath may be prolonged to ten minutes, and soon the patient will be able to extend the time to fifteen or twenty minutes. Cold water at the same time may be thrown into the rectum.

Exercise.—This class of patients should take an abundance of vigorous muscular exercise, even to fatigue. Boxing is one of the best forms of exercise that can be employed, for it brings into action almost every muscle in the body. Walking, running, skating—in short, almost any out-of-door exercise—will be found beneficial. Horseback exercise can not be adopted with advantage.

So much for the general course to be pursued in the management of this class of cases.

Local Treatment.—We come next to the important matter of local treatment. Many authors recommend that a sound be passed down to the prostatic portions of the urethra, when by its pressure it will empty the blood-vessels and reduce the sensitiveness of that portion of the canal. There is no objection to this plan of treatment, but it will not answer to depend upon it alone. The passing of a sound through the urethra three or four times a week, and continuing such treatment for months, will prove about as effective as it would to rub it over the patient's back. The occasional introduction of the sound, however, is not objectionable.

A double catheter has been recommended, through which a stream of cold water can be

carried down to the prostatic portion of the urethra. This can be resorted to about twice a day, but more especially it should be used at night. I do not recommend the use of caustics; but if it should be your judgment that a certain case will be benefited by cauterizing the prostatic portion of the urethra, there is no more convenient instrument which can be employed for this purpose than *Lallemand's porte caustique*, which you see here.

The principal local treatment which I rely upon is the application ef electricity. For this purpose an electro-magnetic battery may be used, to which is attached an urethral electrode, such as you see here. This instrument is insulated to nearly the entire extent, except that part which is to rest against the prostatic portion of the urethra. The other electrode has attached to it a sponge, which is applied over the fourth lumbar vertebra, the region in which the genito-spinal centre is said to be situated, and also down over the sacrum. Now, having introduced the negative electrode and brought its point in contact with the prostatic portion of the canal, allow only a very feeble current to pass through at first. Do not give the patient any pain in the use of this agent. Increase the strength of the current gradually, and use as powerful a current as can be done without causing pain. The first sitting should last about five minutes. If the sitting be too long, a numbness of the parts will be produced, which will for some time delay proper reaction. The following day, instead of using the urethral electrode, you may use the wire-brush, passing it over the inside of the thighs about the perineum, and at the same time applying the sponge over the sacrum and over the lumbar region. The sponge can be carried as low down as the verge of the anus. The third day the urethral electrode may be again employed. At the second sitting the current can be kept up for eight minutes. No sitting, however, should be extended over ten or fifteen minutes.

By a single application of electricity in this manner I have reduced the number of nocturnal emissions from four or five a week to one. When they have been reduced to this number there is no further cause for anxiety, for in healthy men these emissions may occur as frequently as once a week or once in two weeks without producing harm. After the second week you may substitute the rectal for the urethral electrode. The rectal electrode comes in contact with that portion of the bowel lying over the prostate gland, and the current of electricity will diminish the congestion and give tone to the muscular fibres of the gland.

Some authorities recommend the use of the *continuous* current in all cases of impotence; but I have found the interrupted current to answer all purposes, and I never use any other. When you desire to increase or stimulate the erectile power of your patient, it will be well for you to change the direction of the currents several times during one seance.

MEDICAL TREATMENT.—There are certain combinations of medicines which can be resorted to with benefit in these cases, and one of the best prescriptions for a tonic mixture is the following:

℞ Strychniæ..... gr. j;
Quiniæ sulp.h..... ʒ ss.;
Tinct. ferri muriat..... ʒ ss;
Glycerinæ ..... ʒ iv.

M. et S. One half teaspoonful in a wineglass of water four times a day, half an hour before meals and at bedtime.

This is a most excellent tonic in all cases of general debility, and it will also promote erections, although it is not given for that purpose.

There are some patients who prefer to take their medicine in the form of pills. The following combination is tonic, and has more tendency to excite erections than the former:

℞ Arsenite of iron.....
Ext. nux vomica.....
} aa grs. v.
Ergotine. .....
Sulphate of quinia.....
} aa ʒ ss.

M. et Div. in pil. No. xxx. S. One pill four times a day.

In cases in which constipation is a prominent symptom the ergotine may be dropped, and aloes, grs. x, can be substituted. But it is not necessary that you should confine yourselves to the use of these combinations of remedies. You may resort to the use of any tonic prescription with which you are familiar, and which, perhaps, may be a favorite.

MEDICINAL TREATMENT OF IMPOTENCE.—We will next suppose that our patient has been under treatment for some time, that his general health and strength have greatly improved, but that his erections are still imperfect. Now you can give him some of those drugs which are said to possess the power of producing venereal excitement—*aphrodisiacs*. A very common pill employed for this purpose, and one which is productive of good results, provided its effects are closely watched, contains:

℞ Ext. nux vomica..... gr. ¼
Phosphorus..... gr. $\frac{1}{100}$

M. To be taken after meals.

Phosphorus is a powerful stimulant to the genital organs. It will be sufficient to administer the above pill twice a day. If it should disorder the stomach, stop its use at once. If you do not wish to use the phosphorus, you may resort to the fluid extract of damiana, giving it in half-drachm doses three times a day.

There is another remedy which will often operate favorably for this purpose, and that is the common drug known as water pepper. The tincture may be employed and administered in half-drachm to drachm doses. It can be resorted

to with advantage when a stimulating aphrodisiac is required.

Another common aphrodisiac is cantharides. Phosphorus increases the desire for sexual intercourse, and at the same time excites erections; cantharides simply excites erections.

The following prescription may be employed:

℞ Tr. cantharidis..... } aa ʒ j.
Tr. ergotæ..... }
Tr. nux vomica..... }

M. S. Ten to twenty drops four times a day.

The following combination has been recommended by Dr. Bartholow as one of the best:

℞ Tr. sanguinaria..... ʒ ss;
Fl. ext. stillingia..... ʒ ij.

M. S. Twenty to thirty drops four times a day.

Another prescription, which is very efficacious, is the following:

℞ Capsicum..... grs. x;
Quin. sulph..... grs. v;
Sherry wine..... ʒ jss.

M. To be taken at bedtime.

The preparations containing ergot, nux vomica, or cantharides, if the phosphorus is not employed, are those which I prefer. You will not always find it necessary to use these aphrodisiacs, because the applications of electricity generally produce in a short time sufficient erectile power for all practical purposes.

When the patient has been raised to the proper point he should get married.

Now a few words with reference to a second class of cases which will fall under your observation.

A man in general good health, who has probably indulged slightly in masturbation, who is able to have sexual intercourse, but when he is not having such intercourse regularly has nocturnal emissions three or four times a week. Erections trouble him almost constantly, and when he has emissions they occur during sleep and are accompanied with pleasurable sensations and dreams. Such a man comes for treatment under the impression that his genital apparatus is about to be ruined, and that his frequent emissions will destroy his general health.

In the management of his case tonics and aphrodisiacs will not be required; their administration will do harm. Such patients are relieved by the use of bromide of potassium or sodium. If the bromides are resorted to in the first class of cases you will do harm; so here if you employ the method of treatment recommended for the first group of patients you will be equally successful in effecting a cure. Bromide of potassium administered to a patient simply because he has seminal emissions may do a great deal of harm.

In the second class there is an over-excitement of the genital organs, which is usually controlled by administering twenty grains of the bromide of potassium at night and four times a week. During the second week the dose may be increased to thirty grains, and that is about as far as it should be carried. Its use, however, should be preceded by a brisk cathartic. Independently of the bromide, camphor may be used in ten-grain doses at bedtime, or it may be combined with the bromide. Cold bathing will be found serviceable in this class of cases. This treatment, however, must necessarily produce only temporary benefit, for there will be relapse soon after the remedies are discontinued. The radical cure, therefore, consists in the man's getting married. Marriage alone is sufficient to bring about a cure. There is nothing which will relieve the abnormal congestion of the genitals so much as moderate sexual intercourse.— *Joseph W. Howe, M.D., in N.Y. Medical Record.*

ON THE TREATMENT OF RHEUMATIC FEVER.

By Dr. Julius Pollock, Senior Physician to Charing-Cross Hospital.

The treatment of rheumatic fever has lately undergone a complete revolution, which has happily placed it on a much more satisfactory footing. But a short time ago, a tolerably severe case was pretty sure to last six or seven weeks, almost uninfluenced by the remedies employed. Some put their faith in quinine, some in alkalies, some in various drugs, and some did nothing, with much the same result; and Sir William Jenner himself, when president of the Clinical Society, spoke of the doubt and uncertainty with which he used to approach the treatment of articular rheumatism under the old *régime*. It has been claimed for the alkaline treatment that it diminished the liability to heart mischief; but about this I think there is some doubt. If, however, it is thought desirable to try it, thirty grains of the bicarbonate of potash may be given every four hours, with or without five grains of nitrate of potash in some peppermint-water or any other suitable vehicle. The potash produces no disagreeable effects, and may be continued for any length of time. It always diminishes the acidity of urine, and sometimes makes it neutral or even alkaline. With this internal treatment, the affected joints may be kept wrapped up in lint soaked in an alkaline lotion (bicarbonate of soda, one ounce; distilled water, one pint), and covered first with oiled silk, and then flannel or cotton-wool. In all cases of rheumatic fever the bowels should be kept gently open, but it is needless and undesirable to purge for mere purging's sake. The diet should be light, consisting chiefly of slops. Stimulants are not necessary as a matter of course; and the patient must remain quietly in bed until such time as his disease takes its departure, which will vary,

under this treatment, according to the severity of the symptoms or the tendency to relapse, from three to six or seven weeks, or even longer.

My late colleague, Dr. Hyde Salter, was in the habit of using quinine in the treatment of acute or subacute rheumatism, and I have had many opportunities of observing the result, which I cannot say impressed me at all favourably. Dr. Garrod combines the quinine and alkaline treatment, using a mixture made by rubbing up the quinine with the bicarbonate of potash, a little mucilage, and some aromatic tincture, in such proportions that each ounce and a half of the mixture contains five grains of quinine (in the form of carbonate) and thirty grains of bicarbonate of potash. This dose is given to an adult every four hours, and continued as long as may be deemed desirable. Dr. Garrod speaks favourably of this combination.

Of the treatment of rheumatic fever by bleeding, mercury, colchicum, antimony, it is unnecessary to say more than that modern experience has found such agents powerful only for evil. Iodide of potassium has been a good deal used, and though of but little service during the height of the disorder, it is often useful later on, helping us to "speed the going guest." Guaiacum is another drug which is sometimes successful in relieving the pain of the joints in the more chronic forms of articular rheumatism.

Reference must be made to the external modes of treating or assisting the treatment of rheumatic fever. Of these the chief are the hot-air bath, the application of alkaline lotion, cotton-wool, blisters, or iodine paint, to the inflamed joints. The hot-air bath has seemed, in some instances, to relieve pain, and its diaphoretic effects may be of service in eliminating the morbid material of the disease; but in a complaint like acute rheumatism, where the temperature is liable to range high, the application of external heat cannot be made without some risk, and the permanent benefit would appear to be doubtful. Besides which the excessive pain that attends any movement in the height of the disease would make it difficult, if not dangerous, to apply the remedy. The application of warmth to the affected joints is always grateful to the patient, and wrapping them up in cotton-wool or flannel generally alleviates the pain. The use of the alkaline lotion may prove beneficial, either in the same way or from some soothing influence connected with the alkali. Blisters and iodine paint are scarcely applicable during the acute stage of the disease, but are often of service subsequently by hastening the absorption of any fluid that may linger in the joints, and toning up the weakened parts. Blisters should be applied a little above the affected joint rather than over it, whilst iodine paint should be used cautiously, as, in certain persons, it produces such an inflammation of the skin as to amount almost to erysipelas.

Such, then, was the more or less unsatisfactory state of things with regard to the treatment of articular rheumatism until within the last year or two, when Dr. Maclagan struck the keynote to a better mode of action by his researches into the use of salicin. This physician published a paper in the *Lancet* On the Treatment of Acute Rheumatism by Salicin," (*Retrospect*, vol. lxxiii., p. 34), from which it appeared that having been struck by some analogy between that disease and intermittent fever, Dr. Maclagan conceived that acute rheumatism might be of malarious origin, and receive benefit from the alkaloid derived from the willow bark. Without entering into any discussion of the theory which led to the experiments, there is no doubt that they were more or less successful, Dr. Maclagan detailing several cases of true rheumatic fever which, under the use of salicin, became convalescent, on an average, in four days. The first case treated was in November, 1874, and there is no doubt that Dr. Maclagan was the first person who drew attention to the value of salicin in rheumatism. Subsequently to the publication of the paper in the *Lancet*, large numbers of cases of the disease were treated with salicin, but with somewhat varying results, and in my own case, I confess, without any success. The dose given was generally from twenty to thirty grains, or more, every two, three or four hours, and large amounts were required to be taken before much benefit was obtained. Such was the demand for salicin that the price of the drug rose from 1s. 6d. to 10s. or 12s. an ounce; and at one time there was an absolute famine, and wholesale dealers would quote no price for it.

In the meantime German physicians had been trying the effect of the derivatives of salicin—salicylic acid and the salicylate of soda. The second number of the *Lancet* of January, 1876, contained a notice of the observations of Dr. Reiss, in the Berlin Metropolitan Hospital, on the use of salicylate of soda, chiefly in regard to its action in reducing abnormal temperatures. Now, although salicylic acid and its soda salt may be valuable antipyretic agents in many cases of high temperature independantly of the nature of the disease, it soon became apparent that their good effects were especially marked in rheumatism. This led to the use of the drug in ordinary cases of rheumatic fever, and with the most satisfactory results. Some observers preferred the acid, some the soda salt. It is probable that the salicylic acid is the active agent in either case, just as the iodine is the active agent in iodide of potassium; but crude iodine is rarely given now, and in a short time I believe the salicylate of soda will be used in all cases where the action

of salicylic acid is desired. It is very soluble, which the acid is not, and it is far less liable to give rise to unpleasant symptoms. I give the preference most decidedly to the soda salt as at present advised, though it is quite possible, indeed likely, that combinations of salycilic acid with potash, ammonia, and iron, may turn out to be very valuable. In any case of articular rheumatism, whether acute, subacute, or chronic, the salicylate of soda should be tried in doses of ten, fifteen, or twenty grains, every two, three, or four hours, according to the severity of the symptoms. It is best to give it alone, or in combination with a little spirits of chloroform or syrup of orange. As a rule, the good effects of the drug are apparent after eight or ten doses; the temperature falls rapidly to normal, or even a little below, the pain and swelling of the joints disappear, and the patient is practically convalescent in two or three days; but it is better to keep up the action of the medicine for a week or so, as relapses are liable to occur if it be discontinued too soon. In some intensely rheumatic subjects it will be necessary to give it again and again before the disease is subdued, and these cases have been used as an argument against its efficacy. Some persons will not admit the value of mercury and iodide of potassium in the treatment of syphilis, and others question the protective power of vaccination against small-pox. All new remedies have to encounter the opposition of ignorance and prejudice, but the evidence in favour of salicylate of soda in the treatment of articular rheumatism is becoming so overwhelming that its great value must shortly be thoroughly established.

No doubt the drug every now and then produces disagreeable symptoms—sickness, deafness, tinnitus aurium, and sometimes a peculiar cerebral disturbance; but these quickly vanish on a discontinuance of the medicine, which may usually be again given in a short time without any such result. In the earlier trials, when the salicylate was not quite pure, these objectionable symptoms were much more common than now. Dr. Murchison has suggested, in an able paper read before the Clinical Society on the 25th of last May, that the disagreeable effects of the remedy are due to suppression of the function of the kidneys, and has found albumen in the urine of patients who were taking the salicylate of soda, even when the drug was quite pure. This may be so, but at present I have been unable to collect any evidence on the subject.

One word in conclusion. On its first introduction, salicylate of soda was thought to be of *special* value in the hyperpyrexia of acute rheumatism, but about this there is, I think, some doubt. It controls the temperature by counteracting the rheumatic poison, but in these cases which I have spoken of early in this paper as malignant, it frequently fails to reduce the temperature, and is as ineffectual to cure the patient as large doses of quinine or the cold bath.—*Lancet, Oct.* 20, 1877, *p.* 564.

TREATMENT OF SECONDARY PUERPERAL HEMORRHAGE.

Dr. Bailly, Prof. Agrégé of the Faculty of Medicine, contributes a paper to the *Bulletin de Thérapeutique* for September 30, on the efficacy of this method of treating secondary uterine hemorrhage, devised by Prof. Tarnier. By secondary hemorrhages he understands those which are produced from the second day to a month after delivery. These are generally due to a congestion of the uterus, usually spontaneous, but sometimes caused by the presence of a foreign body in the cavity, too early getting up, a violent effort, or vaginal injections injudiciously employed. Such hemorrhages are rarely dangerous, but they recur frequently and often obstinately, and cause great alarm to the patient. The ordinary measures for arresting them are far from being always successful, and are usually tedious; and, at Prof. Tarnier's suggestion, the author of this paper commenced in 1874 the trial of warm baths. The success attending the use of these has been so great that he publishes two of the cases in which he employed them. In the first of these the hemorrhage commenced only on the eighteenth day after delivery, in a woman of feeble habit of body. The uterus was enlarged and congested, and the hemorrhage, without being alarming, resisted all the usual hæmostatics during ten days. Prof. Tarnier now advised warm baths. The first of these greatly modified the discharge, and the second suspended it completely. Recurring at the end of thirty-six hours, it was definitively arrested by the third. The uterus gradually diminished in size, and at the end of a week the patient was able to get up. In the second case the hemorrhage came on only on the twenty-seventh day after delivery, the uterus being as much developed as at the third month. The liquid blood discharged was not very considerable, but it became continuous, and was accompanied by coagula. Ergot in different forms, and vinegar injections, having been tried in vain, a warm bath of half an hour at once suspended the discharge; and, on this recurring next day, a second bath completed the cure.

Although in possession of several cases in which their efficacy proved as complete as in these two, Dr. Bailly observes that their success is not always so prompt. He has always found them less efficacious at the commencement of the hemorrhage than when this had persisted for some time; but, as they produce no inconvenience at the earlier periods, they may also be then employed concurrently with other

measures. The only objection to the method that he is aware of is, that at first it shocks the prejudices and alarms the patient. They should not be resorted to prior to the tenth day after delivery, in consequence of the fatigue and danger which their application might then give rise to. Care must be taken, also, that the temperature of the water (about 34° C. or 93° Fahr.) should be rather raised than lowered, all chilling being avoided. From twenty to thirty minutes is a long enough duration to secure the general revulsion sought for; and as one bath rarely proves enough, they may be repeated daily. Prof. Tarnier was induced to try the procedure in puerperal metrorrhagia in consequence of having observed its efficacy in the hands of M. Salgue, of Dijon, who successfully employed it in non-puerperal metrorrhagia; he adopted it for this form of hemorrhage after delivery, and has for many years recommended it.

In another number of the *Bulletin* (Oct. 30) we find an article by Dr. Constantin Paul, Professeur-Agrégé, upon the great utility of hypodermic injections of ergotine in various forms of metrorrhagia. The formula which he has employed has been—ergotine two grammes, water and glycerine of each fifteen grammes. The solution assumes the brown colour of the extract of ergot, and keeps well, not losing any of its activity in even three months after its preparation. In the fourteen cases in which he has employed this, Dr. Paul has found it succeed in almost a marvellous manner; the hemorrhage, which was always severe and often dangerous, having in all been arrested in sixteen minutes at latest, and in several much earlier. The patients were either the subjects of more or less advanced cancer of the uterus, or in the puerperal condition. The advantageous action of ergot, taken internally, on uterine hemorrhage, has been long known; but on comparing this with the effect of hypodermic injection, the latter proves of much greater value. The time required for the operation of ergot varies from a quarter of an hour to thirty-six hours; while ergotine arrests the hemorrhage in from five to ten minutes; and in hemorrhages time is everything. Not only is the action of powder of ergot less rapid than the injection, but it is also less constantly efficacious, three or four doses being sometimes required. Ergot in powder also always gives rise to colicky pains, of which the patients complain much; but this is not so with the ergotine. The injection is not very painful, and does not produce any local inflammation, sometimes only leaving a slight hyperæsthesia at the point of insertion. So employed, intolerance of ergotine has never been noted. As Prof. Gubler has already observed, it is most remarkable that while a dose of even four grammes taken by the mouth is very doubtful in its action, a dose sixty times less, given by injection, exerts so marked an effect. Certainly there is far greater discrepancy in the doses required, according to the mode of administration, than is observed with regard to most medicinal substances. In the cases related by Dr. Paul in his paper, an injection of sixty-six milligrammes of ergotine arrested the hemorrhage in from five to ten minutes.—*Med. Times and Gaz.*, Dec. 8, 1877.

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RETIREMENT OF T. SPENCER WELLS.

T. Spencer Wells has retired from the Samaritan Hospital of London, at which institution he made his reputation as an ovariotomist. He performed in the above hospital 408 ovariotomies, with 309 recoveries. Of the last 29 performed last year, 27 recovered. His remarks on his retirement are worthy of being read. We give them below:

"A long while ago I was deeply impressed by some remarks made by Sir Benjamin Brodie on his retirement from St. George's Hospital, after 18 years' service as surgeon. I forget the exact words, but he has reprinted something very like them in the conclusion to his 'Autobiography.' He says: 'It was not without a painful effort that I made up my mind to resign an office to which I had been sincerely attached. In doing so I was influenced by various considerations. One of them was, that I began to feel the necessity of diminishing the amount of my labors. Then, I have long since formed the resolution that I would not have it said of myself, as I had heard it said of others, that I retained a situation of such importance and responsibility when, either from age or from indifference, I have ceased to be fully equal to the duties belonging to it. And, lastly, when I saw intelligent and diligent and otherwise deserving young men around me, waiting their turn to succeed to the hospital appointments, it seemed to me that there was something selfish in standing longer in their way, when, as far as my own

mere worldly interests were concerned, I had obtained all that I could desire.'

"When I first heard these statements of Sir Benjamin Brodie, I determined that, if I should ever be placed in any like position, I would do my best to follow the example set by so wise and good a man; and, in carrying out that determination now, I trust that, while I am thus enabled to devote more time and attention to my private practice, I shall still be of some use to the suffering women in the hospital, without standing in the way of ambitious and deserving juniors, who have worked long and hard for the position they have now attained, and which, I sincerely hope, they may enjoy for many years to come."

SULPHUROUS ACID IN THE TREATMENT OF ABSCESSES.

At a recent meeting of the Clinical Society of London, Mr. Osman Vincent described a method by which he had opened eighteen lumbar abscesses without a fatal result. The abscess was first opened and then injected with a solution of equal parts of sulphurous acid and water, after which a poultice was put on. Next day the injection was renewed, and some tenax applied. The treatment went on till the cavity healed up. The injection sometimes gave pain. Sometimes the fluid returned clear, and at other times black. When sulphurous acid was injected, it acted upon the pyogenic membrane, and then pus did not re-form.

OBITUARY.

Hector Peltier, M.D., Edin., Professor of the Institutes of Medicine, in the Montreal School of Medicine, affiliated with Victoria College, Cobourg, died on the 26th of January, in the fifty-sixth year of his age. Dr. Peltier was one of the most prominent of the French Canadian physicians in the city of Montreal, and was held in the highest esteem and consideration by every member of the profession of both nationalities. He was, in fact, a bond of union between the two nationalities, and his death leaves a blank which it will be difficult to fill. Possessed of a nature highly polished and sympathetic, he was the friend of all, ready at all times to smooth down asperities, which he often did by the geniality of his disposition, and gentlemanly candour. Death overtook him, as it so often does members of our profession, while actively engaged at his work. Three days before his death, while engaged in lecturing to his class, indistinctness of utterance was noticed, and so rapidly increased, that he closed his lecture. Before leaving the College building this increased rapidly, and was followed by hemiplegia. He was conveyed to his residence, and the aid of his *confrères* called in. Consciousness returned considerably, and he was able to signify his prompt recognition of friends by mentioning their names. He continued in this condition for a couple of days, when the symptoms again became worse. Profound coma then rapidly supervened, and, on the third day from the commencement of the attack, he quietly breathed his last. For the following particulars of his life we are chiefly indebted to our contemporary, the *Canada Medical and Surgical Journal*:—

Dr. Peltier was the son of the late Toussaint Peltier, Q.C., a man who, in his lifetime, enjoyed the confidence of the public as an advocate of learning and ability, and of scrupulous probity. At an early age Hector, his son, was sent to the college at Nicolet, where he commenced his studies in general education. Subsequently he attended as a day scholar at the College of Montreal. In 1838 his father, with the view of giving his son superior advantages, sent him to Paris to the College of Henri IV., where he spent two years in following the higher branches of a liberal education. Here he was remarkable for his perseverance, ability and punctuality and the uniform gentleness and amiability of his disposition. After completing his preliminary education, medicine became the profession of his choice, and he entered as a pupil at L'Ecole de Medicine, Paris, and followed the courses in that faculty, while attending the practice of the hospitals. In August, 1844, he repaired to London, and, during the ensuing two months, attended the practice of Guy's and St. Thomas' hospitals. The following October he proceeded to Edinburgh and entered as a student at the university in that city, where he graduated on the 1st of August, 1845. On leaving Edinburgh he again visited Paris, where he remained for a short time; and, after a visit to Dublin, he finally sailed from Liverpool for New York, whence he returned to Montreal.

In February, 1846, he received the license of the old Medical Board, entitling him to practice his profession in Canada.

In 1848 Dr. Peltier, with a few other young men (of whom the late Sir G. Duncan Gibb, Bart., of London, England, was one), established the Pathological Society of Montreal, and the year following Dr. Peltier was elected Vice-President, and subsequently he filled the Presidential chair.

The year 1849 brought an epidemic of Asiatic cholera. The larger share of the labour fell on the

junior members of the profession, as that disease was most prevalent amongst the poorer class of the community. As it was believed that, in all likelihood, cholera would again invade the city the year following, it was deemed desirable to establish a free dispensary for affording relief to the poor of the city. Relief was to be afforded to all deserving comers, independent of creed or nationality. Dr. Peltier shared in this good work of getting up and establishing on a sure footing this charitable institution. He, with five other physicians, canvassed the city for support, and the Montreal Dispensary was firmly established—an institution which subsequently received an Act of Incorporation from the Legislature, and which to this day is recognised as one of the prominent and most useful charities of this city of Montreal.

Dr. Peltier assiduously performed his duty as one of the attending physicians to the dispensary, and continued to do so long after he had received an appointment as one of the attending staff to the Hôtel Dieu Hospital. This, with increasing practice, and service rendered to several other charities, so encroached upon his time that he was forced to retire from the active staff of the dispensary when he was unanimously elected a consulting physician to that charity,—and he continued to the last to take a deep interest in the welfare of the institution.

After the passing of the Act of Incorporation of the profession of this Province in 1847, in consequence of the provisions of the Act regulating the study of medicine, several additional lectureships in the School of Medicine and Surgery had to be made, and Dr. Peltier was selected to fill the Chair of Institutes of Medicine; this was in August, 1847. This chair he has filled ever since.

Dr. Peltier contributed several papers of worth, which are to be found in the pages of the Canadian periodicals—one, in the French language, which appeared in the *Canada Medical Journal* for April, 1852, on a case of compound comminuted fracture of the astragalus, with dislocation of the bone. Several other papers from the pen of Dr. Peltier are to be found in the pages of the *Medical Chronicle*—all of worth and interest.

In 1850 Dr. Peltier was elected a Governor of the College of Physicians and Surgeons of Lower Canada, and since that period he has always received the support and votes of his *confreres* of both nationalities. He has held the several offices of Secretary, Registrar, and Vice-President, and, had he lived, would have succeeded to the Presidential chair, as he was a general favourite, a fluent speaker, and full of wit and humour.

In 1872 the Medico-Chirurgical Society of Montreal was re-organised, and, in consequence of a previous failure of this Society, when the papers were written and the debates conducted in both languages, it was decided that its proceedings should be carried on in English. This society Dr. Peltier joined, and the high estimation in which he was held by his English brethren is shown by the fact that he was, in the second year of its existence, elected to its presidential chair. His successful administration of its affairs, and his genial hospitality extended on one well-remembered occasion to its members, is looked back upon with unbounded pleasure by all who participated in it. The cordial good feeling towards him will be well understood when we state that the various Medical Schools in Montreal, as well as their students, passed resolutions of condolence to his family on his death. Not only this, but they all attended his funeral in a body —the funeral cortège being one of the largest ever seen in Montreal. Although dead, he yet speaks, and his memory will remain green with all who knew him. It will be long before we look upon his like again.

DR. ROBERT LEA MacDONNELL.

Seldom, if ever, has Montreal been called upon, almost within a week, to mourn the loss of two such eminent medical men as Dr. Peltier whose obituary is given above, and the gentleman whose name heads this notice. Dr. Robert Lea MacDonnell was a physician whom any city might be proud to have among its practitioners. Born in the City of Dublin, Ireland, and the son of an eminent physician of that city, he received a liberal education, and early showed a predilection for the medical profession. Soon after his graduation, he assumed the assistant editorship of that well-known medical journal, the *Dublin Quarterly Journal of Medical Science*. Circumstances, however, induced him to turn his eyes to Canada, and the Professorship of Institutes of Medicine of McGill College being advertised as vacant, he applied for and obtained it before his arrival in Montreal. On coming to this city he at once assumed a prominent position, and was elected on the staff of the Montreal General Hospital. An apparently brilliant offer reaching him from Toronto, he was induced to throw up his appointments and proceed thither, only, however, to meet with such bitter disappointment that he returned to Montreal after an absence of a few months. On the inception of the St. Patrick's Hospital scheme, about the year 1851, he at once heartily gave his assent to it, and, along with Dr. David, took an active part in its early organization. He became attached to it as surgeon, and served in that capacity till its absorption by the

community of the Hotel Dieu about 1863, when his services were dispensed with. In the year 1852, in conjunction with Dr. David, the present Dean of Bishop's College Medical Faculty, heedited the *Canada Medical Journal*, which ceased to live after a year's existence. From this period he devoted himself to his private practice, which soon became large, and embraced many of Montreal's leading families. He was a clear diagnostician, and in gynæcological diseases had a Canadian reputation. As a teacher of clinical medicine he was admittedly one of the best, if indeed not the best in Canada, and even somewhat recently, more than once hoped that, before his labor was completed, he might yet be in a position to resume what to him was a labor of love. In the Western Hospital movement he was known to take a deep interest, and had that institution been opened, as it was hoped it would have been, in the winter of 1876, he would have been one of its physicians. Dr. MacDonnell was a graduate of K. & Q. C. P. Dublin 1844, and M. R. C. S. J. 1841. He was prizeman in Surgery at the Richmond Hospital Medical School in the year 1839. In the spring of 1877, the University of Bishop's College granted him the degree of M.D., *honoris causa*. He was unable to attend the Convocation of last spring at Lennoxville to have the degree conferred, but had he lived, Convocation would have conferred it on him at the meeting which will take place in Montreal, in April next. But it was decreed otherwise, and his death was sudden and distressing. Although incapacitated by a certain amount of lameness from very active exertion, his feeling of friendship for the late Dr. Peltier induced him to attend his funeral. While sitting in his sleigh, waiting to join the funeral cortège, a run-away horse with sleigh attached came dashing along. He was struck violently by the shaft (it is believed) on the side of the head, and thrown from his sleigh to the ground. Quickly surrounded by medical friends, he was taken up and conveyed home, regaining complete consciousness before reaching it. He was ble to walk into his house, and to answer every question put to him. For twenty-four hours he continued, apparently, without showing the slighest indication of danger, indeed, improving, when suddenly comatose symptoms came on, and in two brief hours he passed away. On the 30th of January a post mortem examination revealed most extensive fracture at the base of the brain. Dr. MacDonnell leaves behind him one son—Dr. Richard L. MacDonnell —the esteemed assistant demonstrator of anatomy in McGill University.

Dr. E. R. Peaslee, the well-known gynæcologist of New York, died in that city early this month, from an attack of pneumonia. He was a poor speaker, but a good writer, and a brilliant operator. He had attained a good old age.

The Action of Medicines, by Isaac Ott, A.M., M.D., formerly Demonstrator of Experimental Physiology at the University of Pennsylvania, with twenty-two illustrations. Philadelphia, Lindsay & Blakiston; Montreal, Dawson Bros.

The physiological action of drugs upon man and the lower animals is a subject, which, during the last few years, has found many earnest and enthusiastic students. The object of their investigations is the placing of the therapeutics on a more scientific basis than is at the present time the case, and certainly should receive the warm encouragement of every member of the profession who desires its advancement. The work before us is an exceedingly interesting one, as it gives the result of a very large amount of original investigation, which Dr. Ott seems to be well qualified to pursue. The various conclusions which the author draws seem the legitimate sequence of the numerous experiments he has performed. The book is divided into four chapters, viz.: 1. How to study the physiological action of medicines. 2. Action on the nervous system. 3. Action on circulatory apparatus. 4. Action of medicines. The first chapter is chiefly interesting to those who may be disposed to pursue the investigation of the subject. The others are of great interest and moment to every thoughtful member of the profession. We feel that works like the present deserve the fullest encouragement from the profession, as their successful sale is an inducement to still further labor in the same direction. Appreciation of efforts made will stimulate to still greater exertion; cold indifference has blighted many a life, calculated, perchance, to add perhaps more than one link to our knowledge. Dr. Ott, the author of this book, is engaged in a good work. His volume is a very valuable contribution to medical science.

Cutaneous and Venereal Memoranda, by Henry G. Piffard, M.A., M.D., Professor of Dermatology, University of New York, and George Henry Fox, A.M., M.D., Surgeon to the New York Dispensary. New York, William Wood & Co.; Montreal, Dawson Bros., 1877.

We have read this little work through with a very great deal of pleasure and profit. Its size is so small and compact that it might be held in one hand for an hour, without occasioning any fatigue. This we consider no small recommendation, for, usually, medical works are difficult of manipulation. Although the book is intended chiefly for students who are unable to procure voluminous works on the special subjects of which it treats, it is still worthy of being purchased by medical men, who, with time constantly occupied, desire occasionally and with speed to refresh their memory, especially on the subject of treatment. The discussion of theoretical questions has been avoided, and histological details have been omitted: this we think very wise, their introduction would have increased the size of the book, and not have added to its practical character. The metric system, as well as the old method, are given, so that those who desire to use either formulas have them at their disposal. The various important skin diseases are described in language so plain, and yet scientific, that we might almost say, "that he who runs may read."

Biddle's Materia Medica, by John B. Biddle, M.D., professor of Materia Medica in the Jefferson Medical College, Philadelphia. Eighth edition, revised and enlarged, with numerous illustrations. Philadelphia, Lindsay & Blakiston; Montreal, Dawson Brothers, 1878.

For year's Biddle's Materia Medica has been a standard text book in, we believe, every medical college in the Dominion of Canada, and rightly so; for we express but our honest conviction when we say that no Materia Medica of the same size contains as much valuable information as it does. Every edition which has been issued,—and the demand for the work has been so great that editions succeeded each other in very rapid succession—has been fully up to the latest advances in Materia Medica. Its style is clear and succinct, and, even on very dry subjects, it makes the reading pleasant. The book has many new illustrations, representing, as in previous editions, most of the important indigenous and naturalized plants. It also has diagrams of the instruments employed in the atomization of liquids, in the new operation of pneumatic aspiration, in the transfusion of blood, and in the recently introduced pneumatic method in the treatment of thoracic diseases.

Most cordially we recommend this book to students of medicine.

The Practitioner's Reference Book, adapted to the use of the Physician and Pharmacist and the Student. By RICHARD J. DUNGLESON, M.D., Philadelphia: Lindsay & Blakeston, 1877.

This is a volume of three hundred and thirty-five pages, and it has been upon our table quite long enough to enable us to form some idea of its value, as a reference book. As mentioned by the author there are in this work, facts and hints, culled from various works and periodicals, which from the scattered sources from which they have been taken must otherwise have remained inaccessible to many. Their collection in a substantial volume is a boon which we have appreciated, and which we feel sure will be appreciated by all who purchase the volume. It is well worthy to find a place on the study table of every practising physician—such is our opinion after having the volume in our possession for over three months. It can be had direct from the publishers, or through Dawson Bros., Montreal.

A Treatise on Gonorrhœa and Syphilis. By SILAS DURKEE, M.D., Consulting Surgeon of the Boston City Hospital. Sixth Edition, with eight colored illustrations. Philadelphia, Lindsay & Blakiston; Montreal, Dawson Brothers.

This is nominally a new edition of this work, but we confess that we see little, if any, new matter in it, comparing it with the last edition; still it is a very readable and valuable treatise upon a class of affections which are, unfortunately for the human family, of too common occurrence. It is a work of a very practical character, giving a number of useful prescriptions which Dr. Durkee has found of great service in the treatment of gonorrhœa and syphilis, and, in spite of some imperfections, it will form a valuable addition to the library of any medical man. The colored illustrations are very good, and, altogether, the work is produced in a most creditable manner.

MEDICO-CHIRURGICAL SOCIETY.

Montreal, Jan. 26th, 1878.

The President (Dr. F. W. CAMPBELL) in the chair.

Dr. BAYNES read his paper on Electrical Therapeutics, which will be found among our original articles. The following discussion ensued.

Dr. REDDY related a case of severe post partem hemorrhage, where he used every known means to arrest the flow without avail, until he sent for his "Palmer's apparatus" and used it with perfect success. Also related cases where lumbago had been cured by it; had experienced its good effects in himself. He also spoke of having tried it in tinnitus aurium, constipation, etc.

Dr. BULLER said that he had been disappointed in its use in tinnitus.

Dr. H. HOWARD expressed his interest in the paper and the great number of cases mentioned in which electricity is said to be beneficial, and expressed the hope that it would do away with the use of medicines to a great extent. Said that in old times he had used it often in tinnitus, but with no good effects.

Dr. TRENHOLME complimented Dr. Baynes on his paper. Expressed his conviction that electricity would be more largely used in the future. Spoke of its good effects in post partem hemorrhage, but thought that hot water injected into the uterus would act with the same results. He was glad that there was such a person as Dr. Baynes in the city, and would be disposed to throw cases in his way.

Dr. SHEPHARD said that hot water had been used in Germany for some time in post partem hemorrhage. Expressed his skepticism as to the effects of electricity in it, but has seen it used with success in aphonia.

Dr. KENNEDY spoke of paralysis in diphtheria. Wished to ask Dr. Baynes about the effect of application of electricity, upon the heart.

Dr. PROUDFOOT said that he had not been much pleased with the results either in eye or ear cases from the use of electricity.

Dr. LOVERIN spoke favorably of the use of electricity.

Dr. F. W. CAMPBELL took exception to the statement, that ergot always did the woman and child harm, whilst electricity never did. He had used ergot very largely for seventeen years, but had never seen any evil effect either to child or mother.

Dr. REDDY had done the same thing.

Dr. TRENHOLME, also, had never seen any bad effects from ergot.

Dr. H. HOWARD said that he had once seen a case of rupture of the uterus from the use of ergot in a woman who had previously borne children.

Dr. Baynes, in reply, stated that he had been misunderstood with regard to the action of ergot always doing harm. He said that it occasionally did so.

Dr. H. HOWARD moved, and Dr. REDDY, seconded a vote of thanks to Dr. Baynes for his admirable paper.

Dr. NELSON related the history of a case of cancer of stomach. *Case.*—Small French Canadian woman, who had a tumor over stomach size of an egg. Eighteen months ago had been in good health. Nine months ago first discovered the tumor herself; had had children; had no history of cancerons disease in any of her family. Drs. Kennedy and Fuller in consultation diagnosed cancer of stomach.

Dr. Loverin proposed a vote of thanks, seconded by Dr. Trenholme, for the very interesting pathological specimens.

UNIVERSITY OF EDINBURGH.

The number of medical students in attendance at the University of Edinburgh, the present season, is nine hundred and twenty.

MEDICAL ITEMS.

A statue of Dr. Graves was unveiled by the Duke of Marlborough, with imposing ceremonies, in the Hall of the College of Surgeons, Dublin, the latter part of December.

Dr. Jurecki is the only Russian surgeon reported killed during the war. He was killed during the attack on Kars.

Dr. Lister is now using horse hair for drainage. He thinks it superior to either rubber tubes or catgut. He has apologized for his offensive remarks about clinical surgery teaching in London. He says that his remarks were based on the condition of teaching when he was a student, and that they were not intended for publication.

Dr. Stokes, sr., the celebrated Dublin physician, died on the 7th of January.

PERMANENT CURE FOR COSTIVENESS.

℞ Sodæ sulphatis..... ... 20 grains.
Ac. nitro-muriat..... 5 drops.
Sig.—Take one hour before breakfast.