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CANADA
MEDICAL JOURNAL

ORIGINAL COMMUNICATIONS.

An Address upon the Power of Nature in the Cure of Disease. Read before the New Brunswick Medical Society. By WILLIAM BAYARD, M.D., Edinburgh, President of the Society, &c., &c

GENTLEMEN,—A year has passed since you so kindly re-elected me as your President, consequently the time has arrived when I should place you in a position to select another in my stead. And let me add, that while I gratefully acknowledge and appreciate the honor conferred upon me, I must this evening give place to another; as I think it for the best interest of our Society that we should have a variety of Presidents, as well as subjects for discussion.

In retiring from this chair, it gives me great pleasure to reiterate what I said upon a former occasion--that our meetings and discussions have been conducted in a spirit creditable alike to our heads and our hearts—illustrating the fact, that genuine good will and brotherhood exists among us—and long may it exist—in the earnest wish of one who has ever valued the respect and esteem of his brother practitioners.

When I last addressed you I made some remarks upon the "*Progress of Medical Science*," recalling to your recollections some of the advances made by *art* toward the cure of disease. This evening, with your permission, I propose saying a few words upon the *Power of Nature in the Cure of Disease*, and shall endeavour to prove that the *delusions* regarding the cure of disease that have existed in former days, and exist in our day, take their origin in and owe their success to this "*Power*."

The states of health and disease are conditions belonging equally to all kinds of animals and vegetables. When the functions of an organized living body are performed in the mode, and in the order, belonging to its natural constitution, it is said to be in a state of *health*. When the functions deviate from their nor

mal type, the individual is said to be no longer in a state of health, but to be ill, sick, or in a state of disease.

Considered as an abstract fact, it cannot be doubted that *nature* possesses the power of curing disease, in other words, that diseases often terminate in recovery without the interference of art. Yet it must be acknowledged that the public generally, not excepting even the literary and scientific classes, are grossly ignorant upon this subject.

Sir John Forbes in his defence of nature justly remarks, that: "Perhaps there is hardly anything in the whole range of ordinary every-day knowledge—that is, knowledge with which everyone is more or less conversant and familiar—which is so little understood by men in general, as the real nature of the medical art, and its actual power in ministering to the relief and cure of disease."

This ignorance is manifested both in public and in private, by the falsest and most absurd notions, supported by arguments oftentimes deliriously ridiculous. That omnipotent monosyllable, *Facts! Facts! Facts!* is shouted by every triumphant disputant, into the ears of sceptics and disbelievers. Dame Nature is ignored—the *post hoc ergo propter hoc* error is sounded, the patient made use of the remedy and got well, therefore the remedy cured him. Such *facts* are to be found in abundance under the reported cures by the "*Royal touch*," "*The Weapon Ointment*," "*The Sympathetic Powder*," "*The Metallic Tractors*," "*Homœopathy*;" *et hoc genus omne*, cures attributed by all sound reasoners, to the power of nature, not to the remedy employed.

In looking for evidence in favour of the curability of diseases by nature, we shall commence our inquiry by citing the fact, that in the case of fatal epidemics among inferior animals, all affected with the disease do not die, consequently those restored to health without treatment of any kind, must be restored by the power of nature alone. We also know that wounds and injuries of various kinds, in wild and domesticated animals, get well without treatment. It is true, we cannot assert that the power of healing, exists in the same degree in man, that it does in animals, but it is a fact that a similar power exists in both.

No people have yet been discovered among whom there is not the semblance of a medical art. Yet the art among most savage nations is so rude, that cures taking place under it must be referred to nature; and the reports of travellers leave no doubt that the cures are many. For instance, we are told that in the Tonga Islands, if a "middling great man" is ill, a finger or two of one

of his dependants would be amputated, but for a chieftain, nothing less would suffice than the strangling of a child.

Mungo Park describes the *Saphias* or charm used by the Africans in the cure of disease. It consists in writing the charm on a board, and drinking the matter of the words when it has been carefully washed off.

Hesselquist reports on the authority of an eye witness, the mode of curing an Ague in Morea: "The patient has merely to lean against a peach-tree during the fit; the Ague is cured, but the tree is killed."

Evidence in favour of Nature's ability to cure diseases is found in the history of travellers and shipwrecked persons, thrown upon uninhabited coasts, surviving the severest diseases and accidents without treatment.

The "*Expectant system*" of treating disease, affords another example of the power of nature. A system followed to a great extent—even by medical men—in Europe. The patient is placed in bed, and potions and ptisans, possessing no medicinal power whatever are given, in other words the case is left to nature. And what is the result of such treatment? No doubt deaths that might have been prevented, take place, and oftentimes the duration of the disease has been prolonged. But also many recoveries from even the severest diseases have been recorded.

Commencing with Edward the Confessor, and ending with Queen Ann, the Monarchs of England were in the habit of "*Touching*" those brought to them for the cure of Scrofula. William the Third discontinued it, but Ann resumed it. The process consisted in placing the hand upon the head of the patient, after which the Monarch hung a piece of gold around the neck by a piece of white ribbon.

Cases are related of persons who had been blind for months, yet recovered their sight immediately upon being "Touched," so as to be able to walk away without a guide. So widely diffused was the belief in this power, that Charles the Second "Touched" nearly 100,000 persons in 12 years.

Dr. Wiseman, the best surgical writer of that time, says: "I myself have been a frequent eye-witness of many hundreds of cures performed by His Majesty's "Touch" alone, without any assistance of chirurgery; and those, many of them such as had tired out the endeavours of able chirurgers before they came hither. It were endless to recite what I myself have seen, and what I have received acknowledgments of by letter, not only from the several parts of this nation, but also from Ireland,

"Scotland, Jersey and Guernsey." Here we have the *fact* that a man of ability believed in a power that could not have existed.

A proof of the fallacy of asserted *facts* in medical experience is found in the history of the "*Weapon Ointment*," and the "*Sympathetic Powder*."

The "*Weapon Ointment*" was said to be composed of "portions of mummy," of "human blood," and of the "moss from the skull of a thief hung in chains." It was used for healing wounds. The injured part was washed and dressed, and the weapon, or a facsimile of it, with which the wound was inflicted, was anointed with the unguent.

Fabricus Hildanus, one of the best surgeons of the time, could not resist the solemn assertions respecting its efficacy, and yielded a reluctant belief in the facts. Lord Bacon who wrote upon the subject, also exhibited a partial belief.

The "*Sympathetic Powder*" composed of "powdered blue vitriol," was applied to the blood stained garments of a wounded person, to cure his injuries, even though the sufferer was miles away. Sir Kenelm Digby procured the recipe from a Friar, who brought it from the East about the middle of the 17th century, and soon had an opportunity for testing its virtue upon his friend Mr. Howel. It is said: "That four days after he received his wounds, Sir Kenelm dipped one of Howel's garters in a solution of the powder, and immediately, the wounds which were very painful, grew easy, although the patient, who was conversing in the corner of the chamber, had not the least idea what was doing with his garter. He then returned home leaving his garter in the hands of Sir Kenelm, who had hung it up to dry, when Mr. Howel sent his servant in a great hurry to tell him that his wounds were paining him horribly, the garter was therefore replaced in the solution of the powder, and the patient got well after five or six days of its continued immersion."

King James the First, his son Charles the First, the Duke of Buckingham, then Prime Minister, and all the principal personages of the time, were cognisant of this fact; and James himself being curious to know the secret of this remedy, asked it of Sir Kenelm who revealed it to him, and His Majesty had an opportunity of making several trials of its efficacy, all which succeeded in a surprising manner." Doubtless the above statements were taken as *facts* to prove an absurdity.

The rise and fall of the *Tar water*, so urgently recommended by Bishop Berkely, is an illustration that however wise, learned, and honest a man may be, it does not necessarily follow that he can reason wisely upon a medical subject. This great and good man

believed that he had discovered a great panacea, and displayed his weakness by writing an essay upon it, asserting in the strongest terms that it would cure almost all the diseases that man is heir to. He gave his experience, and adduced any number of *facts* in support of his idea.

In the year 1796, Dr. Elisha Perkins, an American, promulgated the doctrine that two pieces of metal, one apparently of iron, and the other of brass, about three inches long, blunt at one end, and pointed at the other, which he called "*Metallic Tractors*," were to banish at least half the evils afflicting humanity.

These instruments were to cure diseases of all kinds by drawing them over the affected part very lightly for about twenty minutes. He took out a patent for the discovery, and charged five guineas for what cost about five pence.

Knaves generally seek the credulous to play upon, those with minds unable to weigh the value of testimony, and with minds of the class described by Oliver Wendell Holmes: "Minds with many bright and even beautiful traits; but aimless and fickle as the butterfly, that settle upon every gayly-coloured illusion as it opens into flower, and flutter away to another, when the first has dropped its leaves and stands naked in the icy air of truth."

Perkins soon found any number of dupes and advocates, who hounded on the great medical novelty with arguments and *facts* similar to those used in the present day to bolster up delusions not yet extinct. An establishment called the Perkinian Institution was founded in London with Lord Rivers as its President. It is a singular fact that "nostrum mongers" usually require and obtain a Lord, a Duke, or a General, to aid them in deluding others, as if judgment always accompanied the title. A Perkinian Society was also established, the transactions of which were published, recording in England alone, nearly 5,000 cures, or *facts* that the Tractors were used, and that the persons got well.

The majority of the members of the medical profession treated Perkinism with the contempt it deserved, for which they were assailed and denounced as they are at present, for disbelieving that Hahnenann's globules or Clairvoyant nonsense can cure disease.

The delusion was exposed by Dr. Heygarth, of Bath, producing equally wonderful effects with Tractors made of wood, lead and bone, with nails, slate pencil and tobacco-pipe. Dr. Alderson produced such effects upon five patients with Tractors *made of wood*, that "they returned solemn thanks in church for their cures." Oliver Wendell Holmes relates one of the cases: "Ann Hill suffered for some months with pain in the right arm and shoulder. The Tractors, *wooden ones*, were used, and in the space of five

“minutes she expressed herself relieved in the following apostrophe: Bless me! Why! Who could have thought it, that them little things could pull the pain from one. Well, to be sure, the longer one lives, the more one sees. Ah dear!!!”

And it may be asked how has this boasted discovery stood the test of time? With its brilliant promises, its learned patrons, its eloquent advocates, and its public institutions. It is dead and gone, having slept for the last forty years in the grave of oblivion, without an attempt to resuscitate it. And again it may be asked, to what are we to attribute the extensive belief in this delusion? The answer is simple. To that state of mind which leads the public generally, to give a credulous ear to the most ridiculous promises of Charlatans, to the extraordinary measures made use of to promulgate the novelty, to the almost universal ignorance of the power of nature to cure disease, and an undue estimate of the power of art; and to the fact that persons with minds so constituted, saw what they considered an effect, but mistook the cause, namely they saw the Tractors used, and they saw that the person got well. It is needless for me to say, that to nature belongs the credit for any cures that took place under the use of these instruments.

Every age has had its “medical delusion.” Ours, with its increased knowledge in other matters, is not an exception. Among others, we have Homœopathy. I select it, as probably the best illustration that can be found, of the power of nature in the cure of disease. It has lived longer, and has been more generally adopted than most others. A vast number of persons have recovered while swallowing Hahnemann’s infinitesimal “nothings,” therefore if it can be proved that the “globules,” which Hahnemann says it takes about 200 to weigh a grain, possess no medicinal property whatever, then the only conclusion to be arrived at, is that the cures have been produced by the power of nature alone.

This superlative delusion was founded by Samuel Hahnemann, in 1796, from that time until 1828, he wrote several works upon the subject, and he certainly represents Homœopathy as it now exists. As a system it is expressed by the Latin aphorism “*Similia similibus curantur*,” or *like cures like*—that is, diseases are cured by substances capable of producing symptoms resembling those found in the disease under treatment. A disease, according to Homœopathic nomenclature, consists in a group of symptoms and the proper medicine for it, is the one which is capable of producing a similar group of symptoms when given to a healthy person.

The second great fact which Hahnemann professes to have

established; is the *efficacy of medicinal substances reduced to a wonderful degree of minuteness or dilution*. In his work on chronic diseases he gives us his mode of preparing his little doses. He tells us that one grain of the medicine is to be added to 100 grains of sugar of milk, and after just so many minutes devoted to rubbing and scraping it together, it constitutes the 1st dilution. Each grain of this powder contains the hundredth of a grain of the medicinal substance, mingled with the sugar of milk. Continue the process, and the 2nd dilution will be one ten thousandth; the 3rd dilution, one millionth; the 4th, one hundred millionth; and so on, to the 30th and even the 200th dilution. We are told that the 10th dilution is generally prescribed, but when great power is required, the 30th and up to the 200th dilution is recommended.

It has been computed by Sir James Simpson that one grain of arsenic, at the 30th dilution, would require material equal in bulk to 60 globes the size of this earth, to absorb it.

When liquids are to be used, the same process of dilution is to be observed, but it is ordered that the vial must have but two shakes. For Hahnemann's own words are: "A long experience and multiplied observations upon the sick, lead me within the last few years to prefer giving only two shakes to medicinal liquids, whereas I formerly used to give ten."

We are told that the *pediculus capitis*, is hunted down in his capillary forest and prescribed; it is well for the sensitive stomach of the patient, that the dose contained in the microscopic sugar-plum is so minute.

It may be asked, by what process of reasoning, can a sane mind be induced to believe that such doses possess any medicinal property whatever.

The third great doctrine of Hahnemann is, that "*seven-eighths at least of all chronic diseases* are produced by the existence in the system of that infectious disorder known in the language of science by the appellation of *Psora*, but to the less refined portion of the community by the unmentionable name of *Itch*. In his words:— "This *Psora* is the sole true and fundamental cause that produces all the other countless forms of disease, which under the names of debility, hysteria, insanity, idiocy, epilepsy, cancer, paralysis, deafness, asthma, loss of sense, pains of every kind, &c., &c., &c., appear in our pathology as so many peculiar, distinct, and independent diseases." He also informs us that it took him 12 years to make this "great discovery."

This is a startling discovery to say the least of it, to be made outside the walls of a lunatic asylum.

These are the three cardinal doctrines laid down by Hahnemann

in his "organon" and his Treatise on Chronic Diseases. All Homœopathists agree that the law "*Similia similibus*" is the only fundamental principle in medicine. And the belief in, and employment of infinitesimal doses in general, though a movement has been made of late years, to employ the 1st dilution, instead of the higher ones, as recommended by Hahnemann. And many are becoming ashamed of the doctrine that all chronic diseases originate in Psora. The fallacy of the Homœopathic doctrine has been so thoroughly established by sound reasoning, arguments and experience, no doubt familiar to you all, that I will not take up your time by repeating them; my object being simply to shew that the Homœopathic Materia Medica, consists of nothing but "sugar of milk" and a "nomenclature," and as such can have no effect upon disease.

"In 1835, a public challenge was offered to the best known Homœopathic Physician in Paris, to select any ten substances asserted to produce the most striking effects, to prepare them himself, to choose one by lot, without knowing which one he had taken, and try it upon himself, or on any intelligent and devoted Homœopathist, and, waiting his own time, to come forward and tell what substance had been employed. The challenge was at first accepted, but the acceptance was retracted before the time of trial arrived."

Public trials of Homœopathy have been made in many hospitals in Europe, by men of the highest integrity and standing, and not in a single instance has any effect been produced. And the juggling statistics published by its advocates, have never stood the test of examination. As Oliver Wendell Holmes says: "Most scientific men see through its deceptions at a glance. It may be practised by shrewd men, and by honest ones, rarely it must be feared, by those who are both shrewd and honest. As a psychological experiment on the weakness of cultivated minds, it is the best trick of the century."

As I said before it is the interest of believers in "medical delusions," to ignore the powers of nature. Hahnemann among the rest asserts that "no one has ever seen the simple efforts of nature effect the durable recovery of a patient from a chronic disease."

If the Homœopathic practitioner, when administering his infinitesimal doses, would acknowledge that he is amusing his patient—who as a rule likes to be dosed—leaving nature to do the work; we could in many cases, excuse, though not justify, the deception. But when he asserts in the most positive manner, that his doses possess medicinal property, we are compelled to impugn his

judgment, and stamp his system as utterly false and deceptive. Yet while doing so, we may learn a lesson from its application, it should teach us, to place more reliance upon the powers of nature.

I only allude to the *Clairvoyant* treatment of disease, as one of the delusions of the day. I will not insult your understanding by discussing such nonsense. If a mind is weak enough to believe that any human being possesses the power to distinguish and prescribe for disease—by the examination of some of the patient's hair, without seeing the individual—why! let him swallow the Charlatan's doses, and then engage a room in the Lunatic Asylum.

And now, Gentlemen, when bringing under your notice what I conceive to be proofs in favour of the power of nature over the cure of disease. I by no means wish it to be understood that I undervalue, or do not appreciate the power of *art*; far from it. I say with Sir John Forbes: "The medical art must hold its pre-eminence as one of the greatest boons that human intellect has ever elaborated for man's estate." And I may add, that when the public mind becomes more enlightened upon the course and progress of disease, then, and not till then, will the skill and learning of the scientific practitioner be appreciated.

Daily experience teaches us that nature almost invariably makes an effort to cure disease, but very often cannot accomplish her work, without the assistance of art. And the judgment and learning of the medical man, tells him when to assist her, and when to leave her unassisted. She means well, but does not like to be hurried, she took nine months, more or less, to every mother's son among us, before she thought him fit to be shewn to the world.

As an illustration of the necessity for the interference of art, I may mention that I was once called to a lady, high in position, who had been swallowing "infinitesimal nothings" for about five months, for bleeding from Hæmorrhoids. She became alarmed at the continued flow of blood, and requested her physicians to arrest it, who told her that "it would not do to stop it, as the bad blood was going away." Consequently the pile was allowed to discharge until she became anæmic, dropsical, and unable to leave her bed. Knowing that she had already lost too much of the vital fluid, I immediately took means to arrest the bleeding; gave her iron, cod-liver oil, and nourishing diet, and she recovered in between three and four weeks. Here nature could not perform her part, and required the assistance of *art*, and had art been resorted to at the proper time, this lady in all probability would

not have been confined to the house as many days as she was months.

At about the same time a gentleman came to me with the same disease. I found him plethoric, with a flushed face, and full and bounding pulse, and concluded that nature was relieving some internal congestion; therefore told him to go home and take a glass of cold water every morning, and return to me in four days. He did so, and was quite well. Now, it will require a deal of persuasion to induce this man to believe that the cold water did not produce the effect. He reasoned like the multitude, he was sick, took cold water, and got well, great is cold water! This argument serves all imposters, it is irresistible, consequently quackery flourishes.

St. JOHN, N.B., January, 1872.

On the Glue Bandage in Fractures. By E. D. WORTHINGTON, M.D.,
Sherbrooke.

I read with a good deal of interest the very interesting article in the December number of the Journal, on "The Glue Bandage as a primary setting for Fractured Limbs. By George Ross, A.M., M.D., House Surgeon to the Montreal General Hospital."

In stating that I have used the Glue bandage occasionally since June, 1867, and frequently for the last three years in fractures, and in other surgical cases, I do so with the single view of adding my testimony as to the value of its introduction into surgical practice, rather than with the remotest intention of asserting any claim to priority of use, in this country.

I am persuaded that the Glue bandage has only to be used to be fully appreciated, and I venture to predict that, in the hands of a surgeon possessing an ordinary amount of mechanical ingenuity, with the fractured extremity as a model—a glue pot and brush, and a supply of old cotton or paper—such a perfectly adapted splint can be made, as will completely, and for ever supersede the use of the complicated, expensive, and cumbersome splints now in use.

There is hardly a case of simple fracture of the extremities where it is not at once applicable; and where a broken leg or arm, may not be put up in any position that is thought desirable. There is too, this further and most important recommendation that the glue splint—for it is to all intents and purposes a splint—if carefully applied, must necessarily fit the exact outline of the injured extremity, instead of the injured extremity being obliged

to suit itself to the accidents of form and shape, of perhaps the first splint that comes to hand. Its crowning glory however consists in this—as so ably pointed out by Dr. Ross—that as soon as the Glue bandage is dry, instead of the unfortunate sufferer being subjected to a long and painful continuance in one position, he may be allowed with perfect safety, and no discomfort, an amount of liberty of motion that is truly surprising.

In one of the cases reported by Dr. Ross, the patient having an “oblique fracture of both bones of the leg, got up on the fourth day and walked on crutches from that time until the completion of the cure, without any detriment to the limb.” Really one might be excused for doubting the truth of such a statement, it seems so utterly impossible.

I first used the Glue bandage—or rather a modification of it—in June, 1867, in a case of oblique fracture of the middle of the humerus. The modification consisted in this, that I used a solution of white glue, and thickened it with starch, to give it a body, but I was soon satisfied that the starch was an unnecessary addition. In that case I found that the bandage when dry not only made a perfectly fitting splint, but made the necessary amount of counter extension itself, the arm being of course bent at a right angle. Shortening was just as possible as elongation, and both were out of the question.

In August, 1868, in a case of affection of the knee-joint, where I wished to secure absolute immobility of the whole limb, I proceeded very much in the manner as described by Dr. Ross: Using first a split sheet of wadding, then a roller applied in the ordinary way, smearing glue thickly over this, then another roller, glued, then strips of cotton longitudinally and transversely applied, then a third roller, covered with strips as before, all being thickly covered with glue, until I got a thickness of covering which when dry, fairly encased the limb in a beautifully fitting covering as hard and unyielding as a covering of steel! At the end of about six weeks this was removed, and a second one applied. This second one however was of a different material, and applied in a different manner.

Instead of cotton I used thick brown wrapping paper unglazed, in strips of two or three inches in width, crossing and re-crossing each other in every conceivable manner until I got the required thickness. I adopted this plan for the following reasons: When I removed the first glue bandage, I found the leg somewhat indented from irregular pressure. These indentations had caused some uneasiness, and it was this uneasiness, or as my patient expressed it “cutting in,” which induced me to remove the band-

age. I am thus particular, for it is mainly in this mode of procedure that my plan differs from that of Dr. Ross. Where the continuous roller is used, no matter how carefully applied, there will I think necessarily be some degree of inequality of pressure, as the result of its application, and of course as the bandage dries, this unequal pressure becomes a source of annoyance to the patient, and splitting the bandage down will not entirely remove it. In any case, until the bandage become solid the patient must rigidly and religiously keep in one position, for as the bandage dries, so it remains. When the material—either cotton or paper—is applied in the manner that I have suggested—that is, not round and round in one continuous roller—there is a certain amount of “give” to it, and it naturally accommodates itself to the exact outline of the parts, from the pressure from within, and in this way, according to my experience, there is less liability to the formation of what I may call “ridges” in the drying process.

I used no lining of cotton then, nor have I used it since, but put the paper immediately on the skin. It might be supposed that there would be a serious objection to this, in the removal of the bandage, from its adhering to the fine hairs upon the surface, but this is not to be dreaded; the confined perspiration will be found to have liberated the hairs, at the end of a few weeks. A razor however would remove all cause of alarm. Paper is, in my opinion, better than cotton. It is less elastic, consequently less liable to dry unequally. It makes as firm a splint, it dries soon, and it must commend itself in large practice, or in hospitals, on account of its comparative cheapness.

I have frequently used the ordinary wall paper, and found it to answer admirably. The commoner it is the better. The softer and more pulpy it becomes when wet with the glue, the more easy the splint. And then if the surgeon has an eye to the ornamental, room paper affords every facility for going into the decorative line. I used once some hunting paper, and my patient was lost in admiration, his broken leg, or rather its covering, was a “thing of beauty,” one noble looking grey coming up to a stiff fence especially interested him, and his anxiety merged into doubt as whether the grey would not eventually be obliged to go under, instead of over it.

The relative merits of cotton or paper, and the different modes of applying them, may after all be considered as a matter of taste or convenience. This however is certain, that either will make a splint, that for comfort, lightness and firmness, and for keeping the parts in situ, has never been equalled. Giving it one fair

trial will remove all doubt as to the possibility of Dr. Ross' case "walking about on crutches on the fourth day." Although I never had the courage to venture so soon, upon the "*experimentum crutches*," I am prepared to believe that in a case of simple transverse fracture of the leg, well put up in a Glue bandage, the patient might almost indulge in a hornpipe, or the Highland Fling with impunity!

In a case of fracture, of the leg for instance, with a certain amount of swelling, and where it is necessary to put it up for a few days in the usual manner, with a roller, and in a box splint, or on an inclined plane, the course I have always adopted in applying the Glue bandage is as follows: Dissolve a certain quantity of No. 1, white English glue, to the consistence of drained honey. Get a small sized paint brush, half or three-quarter inch diameter and a smooth board two or three feet in length, on which to give the paper—already cut the requisite lengths—a coating of glue. Now split the roller that is already on the leg down the middle, open the ends out, give the leg a good coating of glue, brushing under both sides as far as possible, and readjust the cut ends of the roller as you would an ordinary tailed bandage. With a little pains the whole leg may be glued, except at the heel and calf, and even at the latter point only a very narrow line need be left untouched. Now apply in succession layers of paper previously glued, and as each layer is completed give the whole a liberal covering of glue.

In five or six hours this will have become perfectly solid. All this time the leg remains in the original splint unmoved. The box splint of course has, or ought to have moveable sides. At the next visit lift the leg out of the box splint, and apply a few thicknesses of glued paper, to cover the unglued line on the posterior aspect of the leg. In this way no assistant is needed, and the whole thing is done without the slightest possibility of disturbance to the fracture.

As Dr. Ross says, all this "might lead some to suppose that the process is long and tedious, and in consequence objectionable," but it need not take up much time, and if it does, the comfort to the patient, and "its never getting out of order," will more than make up for it.

In the early part of January, I had three fractures primarily done up in Glue bandaging. One being of the leg, and two of the forearm, in children. In the leg case there was no confinement to bed at all, the child moving about freely from the first, using a chair instead of a crutch.

I used the glue bandage once, in a case of fracture of the neck

of the Femur, extending the glue splint up the outside of the hip—following the line of the groin anteriorly, and a corresponding line posteriorly—to a point above the pelvis, and then glued the broad bandage passed round the body to the point of this triangle. and I cannot imagine a better form of splint applicable in this form of fracture.

When necessary to split the bandage, an ivory paper cutter will be found very useful, cutting down on it with a sharp knife.

The Glue bandage split and laced, ought to be of service in cases of varicose veins.

I have never found it necessary to sling the leg, that the air may have equal access on all sides to dry it. Glue will dry very quickly in a mortise—where when the tenon is in—the air may be said to be excluded.

I was first led to use the glue bandage from the uncertainty attending the use of the starch one, very frequently in using the latter in Fractures, after the swelling had subsided, I was met with one of the great disadvantages of living in the country. Sometimes after the starch was prepared by most experienced matrons, and sometimes after making it myself, I found on the next day after its use, that it was as limp as possible; and of course in country practice, where a broken limb is often at a distance of several miles, and only seen occasionally, this uncertain stiffness was a serious objection to its use.

This led me to make up my starch with a strong solution of glue, which plan however I followed only twice, as it became evident that the glue alone was quite sufficient, and that it could be certainly depended upon to produce the requisite amount of stiffness, if only made strong enough, and applied with a liberal hand.

The common dark coloured glue is quite unfit for use, it has a most offensive smell, and under any circumstances will not make as good, or as nice looking a splint as the best quality of no. 1, or as it is commonly called "fish-glue." To give some idea of the quantity required, I should say that at least a quarter of a pound would be necessary in a case of fracture of the fore-arm in an adult; and where it is used as a primary setting, perhaps even more would be necessary.

It may be taken for granted, that every one is not acquainted with the fact, that glue may be kept, for any length of time, soft, but undissolved, in cold water. Cabinet makers are I believe, in the habit of keeping a supply of glue, for present use, in cold water; for the reason that not only will it dissolve more readily, but that there will be a difference in its adhesive properties sufficient to pay for the extra trouble. It is well to bear this little

fact in mind and in any case to dissolve the glue without "burning" it. When glue in its hard state is put into hot water, it will take a very long time to dissolve, it will generally form a most aggravating ball, or mass, in the centre of the pot, that would try the patience of an angel to rub down to a uniform consistence. When, on the contrary, it is first soaked for a couple of hours in cold water—as described by Dr. Ross—it will dissolve in a glue pot, or common tin cup, in a few minutes, and in a uniform thick or thin paste, according to the quantity of hot water added. I have for some time kept a supply of glue, in a jar, in cold water. It retains the consistence of soft "gum drops," or "jujube paste." When required I put the soft flakes into a tin cup, or glue pot, add a *very little* hot water, and there is a perfect solution before I can have time to prepare my paper, or cotton appliances. When a thick glue is wanted, no hot water need be added.

Only this morning I met Dr. Paré in a case of fracture of the middle of the leg. The case was his. As there was hardly any swelling he agreed with me that it was a good case for the primary application of the glue bandage. I drove home, got a supply of soft glue, and we finished bandaging the leg before glue—all ready in a carpenter's glue pot—in the house, was dissolved. I merely mention this case to shew the advantage of keeping glue ready prepared for solution.

Case of Retained Placenta. By F. W. SHIRRIFF, M. D.

Mrs. B., aged 35, is in the sixth month of her pregnancy. Has had three children, the last born six years ago. Sent for me about 2 P.M. on the 25th January last. Says that for a month previous she has had great bearing down with pain in back, difficulty in making water, having to lift up the swelling in her abdomen frequently before doing so. Was taken ill during the past night with pains which resembled labour pains. I examined and found the child low down in the pelvis, but could not determine whether it was the head or nates. I could discover no os uteri, but the child was covered with a thickish membrane which was reflected over the posterior part of the vagina, and prevented the passage of my finger betwixt the child and vagina. I waited an hour but no progress was made, pains continuing slightly. I returned at 9 P.M., symptoms the same. Went home and was called again about 4 A.M., 26th; no progress had been made, but it appeared to me that if the membranes were ruptured, immediate delivery would take place. This however I did not dare attempt, as I believed that the child was pushing the uterus before it, and that there must have been a version of the uterus for a long time. I left again at 9 A.M., as I had a patient two miles off whom I must

visit that morning. I returned at 11 and found that the membranes had given way, water discharged, and the head on the perineum. I delivered her immediately of a small child, which lived fifteen minutes. On attempting to remove the placenta it would not move, and the patient reminded me that in all her previous deliveries, I had to remove them by introducing my hand into the uterus, as they were all adherent. I waited an hour, giving her two doses of ergot which had no effect. I now introduced my hand into the uterus without difficulty, but could not reach the upper part, as there was a contraction which would not admit more than two fingers, and I could not reach the adhering part. I persevered for a considerable time, but was at last forced to remove only what portion of placenta was within reach, leaving a large portion firmly adhering, an event which never happened to me before. Of course I watched my patient very closely, and I furnished her with a syringe and carbolic acid solution to be injected into the vagina occasionally. She continued very well until the evening of the 1st of February, when tearing pains and hæmorrhage came on, but not to an alarming extent. I examined and now found the os open, but still could not reach the retained portion of placenta. I gave her an enema which operated well. I left her but was again called up at 12, as the hæmorrhage had slightly returned. I had prepared an infusion of ergot which was to be taken frequently. I saw her again at 4 A.M., when she was seized with rigors. This was easily checked by 20 minims Tra: op. and ʒi spt. ammo. aromat. In the morning she felt pretty well, and continued so all day. Next morning, the 3rd, I was shewn the placenta which had been discharged during the night. It was not putrid, and would have weighed over two ounces. My patient has now quite recovered without any untoward symptoms.

This case I consider to be an extremely interesting one. The membrane covering the presenting nates was not very thick, and at first I felt tempted to rupture it, but on examining more closely when I found I could not introduce my finger betwixt the presenting part and the posterior wall of the vagina, I became fully convinced that the covering membrane was the waters. I regretted very much I was not present when the uterus were discharged, as I then could have easily detected the difficulty. On introducing my hand the os uteri seemed to hang down in broad flaps which was another indication that it was the uterus which was pushed before the presenting part. The portion of placenta was retained nearly eight days after delivery, and seemed to have done no injury to my patient. There was a hæmorrhage on the first day, but not to an alarming extent.

London Practice. By JAMES PERRIGO, A.M., M.D., M.R.C.S. Eng.,
Demonstrator of Anatomy, University of Bishop's College.

No. III.

While visiting Guy's Hospital, I witnessed a death from chloroform. The poor fellow had his foot crushed by a railway carriage passing over it. Not more than three drachms had been administered. During the year I lived in London, there were two other deaths, from the same cause: one at the Royal Westminster Ophthalmic and at the Charing Cross Hospitals. The Canadian student will be surprised in passing from one hospital to another, to see the different kinds of apparatus used for the administration of chloroform.

Guy's Hospital was founded in 1721-24, by Thomas Guy, a bookseller of Cornhill, who at his death, in 1724, endowed the charity with a gift of £219,499. It has since been enlarged by a bequest of £200,000 by the late W. Hunt. The building now contains twenty-two wards, making up 580 beds; medical, anatomical, and operating theatres; a museum, library and laboratory; and a fine collection of anatomical preparations and wax models. It has a chapel, and Sir Astley Cooper, the great surgeon, lies buried within it. It had large open grounds behind, but the authorities have lessened that by building a large addition, which, I was informed, will add nearly 300 more beds; 5,000 in-patients 50,000 out-patients are annually relieved.

At the Brompton Cancer Hospital, Wednesday is the operating day. Here, excision of the tongue is not thought highly of. Messrs. Marsden and Weeden Cook are the attending surgeons. Sutures are altogether discarded in removal of the breast, the edges of the wound being brought together by adhesive plaster. No carbolic acid is used as a dressing, but a mere spirit lotion, and I am certain with as much benefit. I may state *en passant*, that no London surgeon employs acupuncture. Sir James Paget occasionally uses it for the smaller arteries. Cases of epithelioma of the lips and vulva I have seen successfully treated, at least for the time, by Mr. Marsden. He employs two drachms of arsenious acid to one of mucilage. He holds that this paste may be applied to cancers situated in any part of the body, except inside the mouth or nose, or other parts where its application might be dangerous. He says it should not be applied to cancers that exceed four square inches, and only one-fourth at a time should be attacked. This paste is covered with lint and left on for forty-eight hours or three days, and then bread and water poultices applied and changed every three hours. He

does not recommend this treatment for cancers that are deeply seated, but he says that it is applicable to all forms of cancer, except in the above mentioned limits. He has employed this treatment during thirteen years, and finds no other caustic equal to it.

The Brompton Cancer Hospital was established in 1851, but did not occupy its present site till 1860. It is ultimately intended to accommodate 300 patients. From 1851 up to 1869, it has afforded relief to 8,546 patients.

The only thing I saw, out of the common run of cases, at the Black Friars Skin Hospital, was a man who had an indurated chancre, midway between the pubis and umbilicus. Psoriasis seemed to be more common there than here. I think, in England, they pay more attention to the internal treatment than what is done in this country.

Visiting the children's hospital in Great Ormond Street was always a great treat. While there I followed Dr. Dickenson. Cases of chorea are always to be seen here, and about one-half of them, as a rule, had a cardiac murmur. Rest, good diet, iron and strychnia, and during last summer the sulphate of zinc, formed the chief treatment. In giving zinc, Dr. Dickenson begins with two grain doses three times a day, and gradually increases till he gives as much as thirty grain at the dose. I did not see it cause any emesis, and the patients improved as well upon that treatment as any other. The zinc, however, he only gave in acute cases, and only began the treatment after they had been in the hospital for three or four days.

I saw two cases of cardiac dropsy in children 5 years of age. They were put on squills, digitalis, and mercury. They improved and were sent to the convalescent branch at Highgate.

Pleurisy, owing to the neglect of the parents in not bringing their children sufficiently early to the hospital, always ran a severe course, and I was not surprised, when told the reason, at seeing so many cases of empyema. Dr. Dickenson never hesitated to perform paracentesis.

There was a very peculiar case of what was supposed to be Locomotor Ataxia, in a child 5 years old. He was the son of a gamekeeper, and his mother was dead. His father was afraid to leave him in the house, when out on his rounds, and consequently used to take him with him, sometimes leaving him to sleep for hours on cold damp grass and exposed to all kinds of weather. He was a regular little smoker, and showed great aversion to females. He had all the symptoms peculiar to the adult. His muscular power was good, but there was complete loss of co-ordination. He suffered also from amblyopia. His case created quite

a little excitement in the profession, but unfortunately his father would not allow him to remain longer than six or seven weeks.

I saw one poor little girl aged 9 years, die from diabetes. It was proved in her case that the system does absorb moisture from the atmosphere.

Dr. Dickenson is a great believer in the theory that alkalies can prevent amyloid disease in long continued suppuration. This is in the face of opinions recently held of alkalies long administered, causing anæmia by lessening the number of red corpuscles. He shewed me a case on the surgical side, suffering from a suppurating hip-joint, where the patient had been taking citrate of potash for eighteen months, and no amyloid disease present. In looking at the case, I was surprised that excision had not been performed, as it seemed to me to be a typical case for the operation.

The treatment for chronic hydrocephalus was hydrarg seperetâ and compression by an elastic band. Dr. Dickenson informed me that he had had several successful cases, and no other treatment employed.

The fee to attend this hospital is three guineas every six months, and I would advise any person intending to spend that length of time in London, not to neglect its clinical class. He can do so easily, as the visits are made at 9 in the morning.

In my next and last letter, I shall be able to finish in relating the most interesting items that transpired at the Samaritan Female, West London, and Moorfield's Ophthalmic Hospitals.

Proceedings of Societies.

MEDICO-CHIRURGICAL SOCIETY OF MONTREAL.

MEETING HELD MARCH, 9th, 1872.

The Society met in their rooms, the President HECTOR PELTIER, Esq., M.D., in the chair. After preliminary business, JOHN REDDY, M.D., L.R.C.S.I., read the following paper, with cases,

On Paralysis with Aphasia.

MR. PRESIDENT AND GENTLEMEN,—I have much pleasure in bring before you the following cases of Paralysis with Aphasia, which have come under my observation, and trust that I shall not be trespassing too much on your patience, as it is necessary to bring before you the early history of—

CASE I.—On the 6th May, 1860, I was sent for to attend Miss

M. C., aged 11 years, and was informed by her friends that four days previous to my visit, she had been seized with pains in all her joints, which within the past two days had so much increased, that medical advice was deemed necessary.

I found her lying on her back, the face indicative of much suffering, her joints swollen and quite painful to the touch, and total inability to move—on pressing over the epigastrium, it caused her much suffering. Her tongue was white, pulse rapid, breathing hurried, skin moist, bowels confined, and appetite absent. She was unable to sleep owing to constant pain, she occasionally dozed for short intervals, awaking with much pain. Her case was not difficult to diagnose, being one of acute articular rheumatism. She had, however, one alarming lesion existing, which evidently was quite of recent date, a loud systolic mitral murmur extending to apex. While examining, even the gentle pressure of the stethoscope caused her much suffering.

Her treatment consisted of calomel and opium, a blister over the precordial region, and half-dram doses of the bi-carbonate of potash every three hours. During the first three days she progressed very favourably, but on the fourth she was seized with a rigor, followed by acute pleurisy of a mild character, when she was seen by the late Dr. Holmes, in consultation with me. She had so far recovered that on the 31st May she was able to sit up, and in a few days more to get out of bed. I attended her for a short time in June, and under the use of tonics, she rapidly regained her strength, the mitral murmur being much modified in character. I did not attend her again till April, 1863, when she was seized with great dyspnoea and violent tumultuous action of her heart. I then found extensive precordial dulness, with well marked hypertrophy, the heart's action laboring, accompanied with a loud systolic mitral murmur, pulse small and irregular. This attack lasted for about a week, and was gradually subdued by aconite, digitalis, &c., followed by iron tonic, from which she derived decided advantage. I saw her occasionally from this period till 1870, the object of my visits being chiefly to prescribe for weakness, accompanied with general debility. From the date of her first illness she remained more or less anæmic. For the past two years her health has been so good, that I cannot find any memorandum of having prescribed even once for her. Excitement of any kind always affected her breathing and heart's action, and she could not go up or down stairs, face a strong wind, or ascend any height, without a feeling of great distress. Having given you this sketch of her history, I shall give the details of her final illness, death, and post-mortem.

On the 24th January, 172, at 6 o'clock A.M., I was hastily summoned to visit my patient, her brother stating that she had been seized with some kind of fit before he left, and that she appeared partly unconscious. Within twenty minutes I was at her bedside, her dwelling being only a few hundred yards from mine. She presented the following appearance, partly lying towards the right side. Face pale and expressive of much suffering, left hand spread out over the left side of her head and ear, pressing the part firmly; right arm bent at right-angles, with the hand spread over the precordial region; legs partly flexed; pulse 76, feeble and inclined to be thready; heart's action quiet, with a soft mitral systolic bruit heard down to apex; feet warm, sensation unaffected; entire right side of the body slightly cooler than the left, which was best marked on the face, her nose being remarkable for its icy coldness; pupils regular, acting well under light. When addressed unable to reply, though perfectly conscious of our presence, and what we were saying. She made several ineffectual attempts to speak and answer questions, which sounded as if her mouth had been full of food, but not a syllable could be distinguished. She could, however, when asked where she suffered from pain, point with her finger to a small spot over and in front of her left ear, and occasionally she pressed her hand over the epigastrium. Her temperature was $99^{\circ} 3-5$ ths.

I ordered a mustard poultice to be applied to the epigastrium and nape of the neck, and also had her feet placed in a mustard foot-bath, and afterwards had hot water bottles applied to the feet. I also gave her some warm tea, which was almost immediately vomited, accompanied with a considerable quantity of bile. Once or twice she became faint, and also very restless for two or three minutes at a time, unable to keep quiet in any position, at the close of one of these turns, she usually pressed the side of her head, where she evidently was suffering from pain. I remained about an hour and a half with her, and before leaving mentioned to her father, that from the manner of her seizure, and the symptoms following, I believed it to be a case of Embolism. She however had rallied to such an extent, and seemed so much relieved that I left, leaving word that should any change occur before my next intended visit, that I should be immediately sent for.

At 9.15 A.M., I was again hastily summoned, and on my arrival her mother informed me, that a short time before sending for me, she had had a fit which lasted a few minutes, that she then fainted, but had revived again in a few minutes. She appeared to be very weak and restless, pupils unchanged, but the pulse had

risen to 84; the same amount of consciousness was present as when I had seen her previously. Temperature 98. I had hardly finished my examination, when she took a very severe convulsion fit, the left side of her face being very much distorted, the left side of her body seemed only to participate in the attack, this lasted for about two minutes, immediately afterwards the right side of her face became cold, her nose still retaining its icy coldness, I was struck at once with a marked difference between the two sides of her body, although at this period hemiplegia did not exist; her stomach again became very irritable, and she vomited phlegm and bile mixed, she also was suffering from flatulence; her right arm which was now flexed, and her hand pressed over her heart was rigidly fixed there.

To relieve the flatulent distension I gave her a turpentine enema, which had the desired effect, and gave momentary relief. I told her father that what I had so much dreaded at the time of my first visit had now fully taken place, and I advised him to send for Professor G. W. Campbell, as I wished to have a consultation with him. He arrived at 10 A.M., and while examining the case, it occurred to me again to tickle her feet, and although but twenty minutes had elapsed since my last doing so, I found the right leg motionless, the left quite sensitive, the right arm was also powerless. The Doctor coincided with me in my view of the case, and the following mixture was prescribed:

R—Bromidi Potassii ʒii, Iodidi Potassii ʒj.

Tr. Aconiti Brit Phar m xlviij, Syrup Aurant ʒiij

Aquæ ad ʒvj m.

A dessert spoonful every three hours.

A sinapism to the nape of the neck and along the spine, and nourishment such as beef-tea and chicken broth, to be frequently administered.

12.30 P.M.—I visited her again. Pulse 78; stomach has been very irritable, quite a quantity of bilious matter of a sour offensive odour being ejected. She cannot retain the medicine, and seldom the nourishment. She appears weak and restless.

5.30 P.M.—Saw her again, the paralysis of the right side of her body is more marked, and her swallowing is also evidently affected. She however understands what is said, and points to where the pain in her head exists. The pulse is unchanged, she is unable to retain food, at least in such quantity as will nourish her.

10 P.M.—Pulse 84. She appears to be about in the same state as at last visit.

January 25th, 8.30 A.M.—Pulse 90, much weaker. Hemiplegia

more marked; right pupil more sluggish than left: the pharynx evidently affected when she tries to drink. On tickling the right foot it is motionless, the left quite sensitive; the temperature of the right side is remarkably cooler than of the left, and the coldness of her nose remains unchanged.

At 1.50 P.M. she appeared very much worse. Thinking her perceptive faculties were absent, I asked her if she knew me, to press my hand; this she did twice. She nevertheless seemed weak, and if as about to sink from sheer exhaustion.

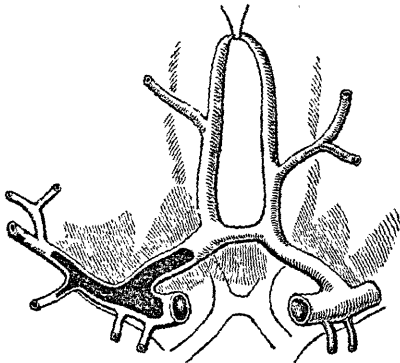
At 7.30 P.M. called again, when I found that about an hour previously death had terminated her sufferings, that shortly after my last visit she was seized with convulsion fits, which lasted up to the time of her decease.

It should have been mentioned before, that on retiring to rest the previous evening she appeared in her ordinary health, nor could any cause be assigned for provoking the attack. She had crossed bare foot from one room to another to reach her bed, and that across an oil cloth. Her mind also had been dwelling on a subject that may have caused much excitement of heart.

POST-MORTEM APPEARANCES.

On removing the calvarium, it was noticed that the anterior portion of the skull was nearly one and one half times as thick as the posterior. Dura Mater looked dark and congested from the outside. Little blood in the sinuses. Pacchionian bodies largely developed. Pia mater coarsely congested. No fluid under the arachnoid. On section, the consistence of the organ was found below par. Centrum ovale anæmic. puncta vasculosa but slightly marked. Very little fluid in the ventricles. Choroid plexuses pale. Cerebro-spinal fluid slightly in excess. Occupying the anterior half of the corpus striatum, and extending from that into the convolutions of the left anterior lobe of the cerebrum, was a patch of softened brain matter pale greyish white in colour, completely broken down, and having in or about its centre a small clot about the size of a duck shot. Examination of this softened matter demonstrated the nerve fibres somewhat shrunken, yet entire, a quantity of debris, &c., but none of the compound granular corpuscles of Gluge. The minute capillaries were loaded with fat granules, and much free fat was observed in the specimens. On searching for the point of obstruction, the left middle cerebral artery was chosen as the likely site, from the group of symptoms occurring in the case. On opening the artery a long, firm, bloody clot was found, commencing in the cavernous portion of the internal carotid, about one-fourth of an inch from its bifurcation,

and from that point extending outwards into the middle cerebral, occupying it to a short distance beyond its first division. In front the clot involves the anterior cerebral, nearly as far as the anterior communicating. The clot was not examined microscopically, as it was thought better to make a preparation of it in situ.



HEART.—On opening the pericardium, a large distended organ presented itself, somewhat fatty on the outside. The auricles and right ventricle were completely filled by post-mortem clots. The walls of all the cavities appeared thicker than normal, the left auricle being in addition enormously dilated. The tricuspid valves were thickened at their margins and contracted a little. On the ventricular surface near the margin were attached several minute masses of fibrine, united to the valve by narrow pedicles about two lines each in length. In place of the mitral valve, a narrow button hole like slit existed, admitting only the top of the little finger, and looking from the auricle like a narrow opening at the bottom of a funnel shaped depression. The ventricular surface of the valve was completely surrounded by a number of short thick chordæ tendineæ, all having their origin from one musculus papillaris, situated about half an inch below the orifice. These chordæ were so arranged, that blood driven from the auricle into the ventricle impinged directly on the centre of the musculus papillaris, and then passed into the ventricle through the openings between the chordæ. The margins of the orifice were much thickened and indurated, rendering closing of it quite impossible.

I am much indebted to Mr. William Osler, who assisted me at the post-mortem, and who has kindly made me this very valuable wet preparation, by which you will be enabled readily to perceive the clot in situ in the arteries described above.

CASE II.—Maggie Q., aged 17, employed at Mr. John Lovell's printing and publishing establishment, came home from her work in apparent good health, on the 29th April, 1870, and having partaken of supper, walked towards the street door, and while doing so, she was suddenly seized with what her mother described to me as a fainting fit, followed by great weakness. She was placed upon a sofa, and I was immediately sent for. On arrival I found her lying on her back, breathing quietly, face pale and cold, with slight contortion of left side, the opposite expressionless, her pupils unaltered by light, the pulse 80, irregular and feeble, the right side of her body hemiplegic, her intellectual power was dull, but loud speaking roused her so that she could understand what was said, she moaned occasionally as if in pain, and at intervals of every two or three minutes, pressed her left hand on the left side of her head over her ear, and sometimes performed the same action over her precordial region. Respiratory sounds normal. A loud systolic mitral murmur however existed (on mentioning this fact to her mother, she informed me that it had existed for upwards of four years since she had had acute rheumatism.) On giving her some water to drink, she swallowed a little without any seeming difficulty. I now told her friends that I believed her case to be one of Embolism, explaining to them what I considered to be the accident that had occurred. I felt however in a better position at the end of twenty minutes to express my opinion more confidently as to its exact nature, she being by this time so far recovered as to understand what was said, and even to point to her heart when asked where she suffered pain, she being at the time perfectly Aphasic.

Having given you the above sketch of this interesting case, I shall merely add that my treatment for some time consisted of the Bromide and Iodide of Potassium, good nourishment, and the occasional use of a small quantity of wine. From the day of her attack to the end of her life, which occurred 9 months and 17 days subsequently, she was always able to recognize her friends and acquaintances, and even to occasionally walk round the room dragging her palsied limb, but she never recovered for a moment from her aphasic state. I learned from her mother that about three weeks prior to her decease, she became suddenly very weak, losing the power over the sphincters, unable to retain either urine or faeces, and that she had even some difficulty in swallowing. I had not seen her for a considerable period, having expressed a wish that at her death, a post-mortem ought to be made (a request they seemed decidedly opposed to,) and which I believe deterred them from sending for me again. Dr. Ross informs me

that she presented herself at the Montreal General Hospital, but would not remain. He recognized the nature of the case also at that time, and took a great interest in her case.

CASE III.—June, 1868, I was sent for to see a woman aged 32, who three months prior to my seeing her had contracted syphilis from her husband, and for which no treatment had been adopted. Her state was truly painful and wretched, she looked haggard and worn out, was quite emaciated, spent sleepless nights, and her appetite gone. She was covered with a plentiful papular eruption, glands of the neck and groin swollen, she had had a chancre on the left labium which had healed, but felt hard at the base, and lastly, an attack of iritis was commencing, very slight angular deformity existing. Her treatment consisted of mild mercurials, mercurial vapor with Iodide of Potassium and generous support. The case progressed favorably till the 8th of September, having gone out the forenoon of that day she accidentally got wet feet, was seized towards evening with a severe rigor, followed by fever, but nothing alarming occurred till 2 o'clock A.M., when I was called to see her. She was then lying in bed very pale, but conscious, completely hemiplegic on the right side of her body, with total aphasia. Her husband stated that she had fits at intervals of 10 minutes for half an hour before my visit shorter insepuration each one. She appeared very weak, but seemed much better on giving her a little brandy and water. I examined her heart, and found a systolic mitral murmur present, but could not tell how long it had existed, nor could I get any history, she had always been a healthy woman till this attack, she had had six children, and a few years previously, she aborted at the third month, being pregnant with twins. I attended her during all her confinements with the exception of the first. For a fortnight after this attack, she had lost perfect control over the sphincters, but within a fortnight regained the power. Within a period of two months she improved rapidly, the aphasic state remaining unaltered for about a year, when she was able to use a few words such as no, yes, &c. Her treatment consisted of Iodide and Bromide of Potassium, iron, quinine wine, &c. For the last two years her condition is unchanged.

CASE IV.—Mrs. A., aged 56, stout build, was attacked with acute rheumatism on the 9th March, 1870, for some weeks previously she had been dyspeptic, and complaining of pains in her spine and joints. She states that fifteen years ago she had been confined to bed for a week with a similar attack. Present state—right

shoulder, elbow and wrist-joint swollen, also left knee and ankle similarly affected, slight redness, and very sensitive to touch, the pain causing inability to move, there is nothing however to note, to distinguish the present from any other ordinary attack of acute rheumatism. Her treatment consisted of bi-carbonate of potash in large and frequently repeated doses, and opium at regular intervals. Everything so far seemed to favor the idea that her recovery would be speedy, till the 2nd April, when a few moments after being propped up in bed (at 7.30 A.M.) while conversing with her husband, and without any premonition, she was suddenly seized with a convulsion fit which only lasted a few minutes. Within half an hour I saw her. Her face was pale, drawn to the left side and expressionless, she made efforts to move her right arm and leg which seemed to be nearly from under the control of the will, and moved sluggishly. There was great debility: pulse 90 and slightly irregular; she appeared like a person as if awaking from a dream. She knew me at once, but was perfectly aphasic.

On examining her heart I found it irregular, and a systolic mitral murmur existing, this also was a new feature in her case, as up to this no lesion of that organ had occurred. She frequently spread her hand over her head as the seat of pain, which was of a dull aching character. Finding that there had been no action of the bowels for 36 hours, I administered a turpentine enema, which produced a large motion and quite a quantity of flatus, much to her relief. I ordered a mixture of aromatic spirits of ammonia to be occasionally given. At 10 A.M., I found her much better; pulse 92, fuller but slightly irregular, face unaltered, could move extremities of right side a very little better; mitral murmur the same; makes a great effort to speak, but cannot form words; pain in her head much relieved. 4 P.M., pulse 84, not so irregular; movements of right leg and arm improved, contortion of face less; makes a painful effort to speak, can utter sounds without the ability to form words. 3rd April, pulse 80, during the night a sudden improvement took place, when she began to speak this morning. 10.30 A.M., she can answer questions and tell about the pain that she suffered from in the head, but the effort seemed to fatigue her. Heart's sound the same, rather more regular, is able to take nourishment, and has nearly regained the use of her right arm and leg. 4th, pulse 80, feels much better, can converse to day, but not fluently. 6th—Has quite recovered the use of her speech. The hemiplegia of right side gone. The left side of her face though improved, has the appearance of a person not fully recovered from facial palsy. She is free from

pain, and convalescence progressing rapidly. The mitral murmur persists.

February 20th. 1872.—Health good, peculiar expression of left side of face remains, pulse and heart's action regular, but the mitral murmur is unaltered.

It may not prove uninteresting to take a glance at the history of Embolism and Aphasia, and the gradual progress made by observers who have endeavoured to locate the faculty of articulate speech; and also to contrast the points of similarity which exist between these observations and the cases which I have brought before you.

When Gall, in 1800, first promulgated his belief that the faculty of articulate language was situated in both anterior cerebral lobes, it would appear after all only as a surmise on his part, nor did the idea seem to gain ground for 25 years later, when Bouillard made the same statement, which he tried to support and establish by pathological facts. Observing that whenever the faculty of speech had been lost, these lobes were always found diseased after death. It was not however till 1836, that another step in advance was made by Dr. Marc Dax, who announced the following idea: That the loss of the faculty of speech only occurred in injury to the left hemisphere, never to the right, and he was the first to observe that persons affected with Aphasia, were always hemiplegic on the right side. In 1861, M. Broca went still further, and stated his opinion more definitely, by locating the faculty of language in the posterior part of the third frontal convolution of the left lobe of the cerebrum, and he designated it as the "Convolution of Articulate Language;" he used the term *Aphemia* to express the affection. In 1863, Dr. G. Dax, son of Dr. C. Dax, laboured to prove that not only is the lesion located in the same lobe as that stated by his father, but he is even more decided in defining the injury as occurring to the anterior and outer portion of the middle lobe of that hemisphere, which borders on the fissure of Sylvius. In 1864, Dr. Hughlings Jackson stated as his opinion that Aphasia with hemiplegia of the right side, is owing to obstruction of the middle cerebral artery and some of its branches, often the result of heart disease, occasionally from injury or syphilis.

It would appear that there have been a good many examples of late years to support the views put forward by those observers who labour to prove that the faculty of articulate language does exist in the left hemisphere and close to the corpus striatum. My cases Nos. 1 and 2 are, I think, striking instances of the truth of their observations, and go a great distance, not only to prove, but

sustain such an idea, in case No. 1 there exists not alone atrophic softening of the centrum ovale, but decided softening in the corpus striatum, and extending from that into the convolutions of the anterior lobe of the cerebrum. A patch of softened brain matter pale greyish white in colour, completely broken down, and having in its centre a small clot. On examining the circle of Willis, a clot is found commencing in the cavernous portion of the left internal carotid, close to its bifurcation, extending outwards into the middle cerebral, and forwards into the anterior cerebral. When you connect the post mortem appearances with the symptoms as detailed in my cases during life (particularly No. 1.) the evidence as to the locality of articulate language appears very striking, and seems in a forcible manner to bear out the views of previous observers. Some are opposed to the idea of locating the faculty of language in the left hemisphere of the brain, considering that the right equally participates. Now if it be capable of demonstration that a difference in the two hemispheres does exist, as is definitely laid down by Todd and Bowman in their work on physiological anatomy, who state that there is not a perfect symmetry between the left and right hemispheres, and give the following remarkable fact: that the lower the brain development is, the more exact will be the symmetry of its convolutions, and give as examples children and the inferior races of mankind, then these striking anatomical facts added to the result I have already given of the postmortem, and the symptoms during life in case No. 1, should I think fully establish the point, that the seat of articulate language is situated in the left hemisphere. Gratiolet who has also investigated this subject, states that the convolutions of the anterior lobes of the left hemisphere are developed at an earlier period than the right, but this needs confirmation.

Case No. 3 is a good example of syphilitic aphasia.

Case No. 4 clearly illustrates Aphasia occurring during convalescence from acute rheumatism, and may have been excited by passive congestion or thrombosis, I incline to the latter idea from the manner and suddenness of the attack, believing that a small clot may have temporarily plugged the carotid, near the middle cerebral artery, and as absorption or solution of this progressed, all the unfavourable symptoms disappeared, and recovery ensued. Again, were it merely the result of passive congestion, I should say recovery would be more rapid.

DR. HOWARD said the thanks of the Society were due to DR. REDDY for the interesting paper he had presented, and upon the subject of which he would like to make a few observations, but

felt a difficulty in selecting the points, so much food for thought existed in the communication. The first clinical fact that struck him was that in two of the four cases just related convulsions occurred at the time of the seizure. Now the tendency of recent opinion is to regard the absence of convulsion at the moment of the occurrence of hemiplegia, as the rule in Embolism of the middle cerebral artery, and its presence as rather suggestive of cerebral hæmorrhage. Yet, remembering that the sudden cutting off of the supply of blood to a large portion of the brain, often gives rise to convulsion, it appears somewhat singular that convulsion is not more frequently observed in Cerebral Embolism.

He would like to know if these patients had ever had epileptic fits previously to the attacks of paralysis? "No." This was important, because the inspection of the first case revealed great thickening of the calvarium in the frontal, as compared with the occipital region; and in the fourth case, the power of both speech and motion returned in a few days after the seizure, as occasionally happens in Epilepsy.

A second clinical feature of these cases, was that they appeared to corroborate the view entertained by British physicians, that complete and marked loss of consciousness is not the rule in Cerebral Embolism, although the late lamented Niemeyer in his communication on the subject, written shortly before his death, had stated that it was.

On the subject of the "faculty of speech" residing in a particular spot in the *left* hemisphere, it was so opposed to the ordinary views of the physiology of the brain, as an organ consisting of two symmetrical halves, and it had been so ably controverted, that it was not necessary to discuss it. It is well known, moreover, that "Aphasia" occurs in lesions of the right hemisphere also—One fact however does appear strange, and requires satisfactory explanation, the much greater frequency of the association of Aphasia with lesions of the left than of the right side of the brain. It may be that Dr. Moxon's suggestion, that one-half of the brain is educated before the other is correct. Gratiolets' statement that the left anterior convolutions are earlier developed than the right, appears to confirm it—and just as the left motor centres of the brain in right handed persons, may be inferred to be specially educated and developed by the constant employment of the right hand instead of the left, so it may be that the centres that regulate language situate in the left half of the brain, are specially educated and developed by those centres being more early and more constantly exercised, than their associates or fellows in the right half.

This referring of defects in language to disease in the third left frontal convolution, appears to be a hasty and unreliable drawing of a general law from a few facts. Let it be remembered that a lesion of the convolutions *per se* may probably be sufficient to interfere with the faculty of language; so may a lesion of the inter-nuncial fibres, which pass between those convolutions and the great motor centres at the base of the brain; and finally, a lesion of these motor centres themselves may, and very frequently does impair or suspend that faculty.

About three weeks ago I was summoned one evening to see a professional lecturer, who after having spoken an hour, suddenly lost his memory, and suffered at the same time impairment of speech. No paralysis of motion or sensation existed, consciousness was intact, he at first employed many meaningless words, which he repeated as though conscious that he was not understood; when told to say "chicken" he invariably said "chippen." A few days later when somewhat improved, he proposed writing down the heads of a lecture which he wanted his son to deliver, and wrote such words as "contubute," "spoking," "dis-pention," etc.

Now in this instance, I doubt not, the lesion was seated in the convolutions of the brain, and involved neither motor nor sensory centres. In Dr. Reddy's first case hemiplegia co-existed, with the loss of speech, and softening was found in the motor centre or corpus striatum. And who can say that in many of the cases of Aphasia, in which the lesion obviously affected the third left frontal convolution, that it did not also, though not perceptibly to the eye involve the adjacent motor centre—the corpus striatum. The whole subject is one of difficulty, and we still want an explanation of the more frequent association of impairment of language with lesion of the left than of the right side of the brain.

Dr. FENWICK stated in reference to the question of loss of speech occurring in connection with lesions of the left side of the brain, he would mention a case which came under his observation some years ago, and which was subsequently published.

A patient was admitted into the Montreal General Hospital, suffering from slight symptoms of fever. On the morning of the attack from which he died, he sat on the edge of his bed, and helped himself to his medicine: while in the act of pouring out the medicine he fell to the ground, though he did not lose consciousness. He had to be lifted into bed, as there was paralysis of the left side. The power of speech was entirely lost, he gradually

improved in this particular, but his speech was thick and unintelligible. Death occurred one month from the first seizure apparently from syncope.

On post-mortem examination, the middle cerebral artery, right side, was enlarged and a fine fibrinous clot was found filling up its entire calibre; the right corpus striatum was yellowish in colour and softened in texture. On examining the heart the mitral valves were found covered with vegetations.

DR. GEORGE W. CAMPBELL observed that he had met with one case in which there was paralysis of the *left* side, with loss of the power of articulation occurring suddenly, during apparent convalescence from acute rheumatism, in the course of which a cardiac murmur had been developed. This was now many years ago before the subject of Embolism had ever been written upon, but he had upon reflection been drawn to the conclusion, that obstruction of the vessels of the brain must of necessity have been the immediate cause of the paralysis, and that the probability was that the obstructing body had been derived from the valves of the heart. This case proved fatal, the aphasic condition remaining until the end, but no post-mortem could be obtained. Since the occurrence of Embolism had come to be recognized, he had witnessed several examples of this affection in different vessels. One notable instance he would like to mention: The patient, a gentleman of about 45 years of age, had been for some years the subject of chronic heart disease, there being distinct aortic murmurs and hypertrophy. Stricture of the aorta had also been diagnosed. Whilst travelling in the States, he was seized with violent pain in the left foot, which was at first looked upon as an attack of gout, but having been seen by an eminent physician of Philadelphia, and told by him that he believed that the artery of the limb was plugged, he was advised to return at once to Montreal where he resided. Here the previous diagnosis was fully confirmed, and a few days subsequently he was seized with most severe pain in the right arm, which rapidly became perfectly white; a firm elongated clot could now be distinctly felt in the axillary artery. He died soon after, and upon examination entire obliteration by firm clots was found in the right brachial (for the clot had been forced onwards) and in the left posterior tibial artery.

PERISCOPIC DEPARTMENT.

Surgery.

CASE OF AVULSION OF THE RIGHT ARM AND SCAPULA.

By J. J. CHARLES, M.A., M.D., M.Ch. &c., Demonstrator of Anatomy, Queen's College, Belfast. Read before the Ulster Medical Society, Feb. 3rd., 1872.

The following case is instructive, as exhibiting the extraordinary powers of nature in sustaining life after severe mutilation.

On Sept. 14th, 1870, I was called to Tintagh, about six miles from Cookstown, Co. Tyrone, by Dr. Otterson, of Moneymore, to perform an operation on a boy, named Stephen M., who had met with an accident in a scutch mill. The patient was ten years of age, and of a healthy constitution. About 11 A.M. he was carelessly handling the wooden rollers in the mill, when, his right hand having been caught between them, the limb was dragged in, and almost completely torn from his body before the machinery could be stopped. Considerable hemorrhage was said to have occurred, but I have good reason for doubting the statement. The boy was carried to a neighbouring house, as his home was at a considerable distance.

On examination at 4 P.M. the boy was found cold and weak, yet suffering less than might have been expected from either pain or constitutional depression. The right limb presented a frightful appearance. The integument was stripped from a considerable portion of the side of the chest and front of the shoulder, leaving a large and very irregular wound, which extended downwards from the acromial end of the clavicle for several inches. But the soft structures behind the shoulder-joint served to keep the limb still attached to the trunk, and, strange to say, were remarkably free from injury. The greater part of the upper third of the humerus and the whole of the scapula were torn away, and some of the boy's friends stated that several pieces of bone were seen lying on the floor of the mill beside the rollers. The outer extremity of the clavicle, having lost its scapular attachment, projected from the wound; and the axillary vessels and nerves were torn across at distances varying from one to three inches below

the first rib. The pectoralis major muscle, which, at its outer part, lay fully exposed, as if it had been dissected, was intact, and its tendon still remained firmly connected with the outer bicapital ridge of the humerus, which had been detached from the rest of the bone; thus affording very strong evidence of the intimate union subsisting between tendinous fibres and the bone into which they are inserted. The lower part of the humerus, and the radius and ulna, as well as many of the bones of the hand, were extensively comminuted; while the soft parts covering them were contused and lacerated to a shocking extent.

The patient having been partially chloroformed, the limb was separated from the body by cutting as large a flap as possible from the soft structures which had covered the scapula and the outer part of the shoulder-joint. The cords of the brachial plexus were then cut short; and the axillary vessels, though already occluded by the natural process, were ligatured, and about an inch of the protruding end of the clavicle sawn off. After "trimming" the soft parts, the large flap was attached to the integument on the front of the chest by means of four sutures and a few strips of adhesive plaster. Lastly, the wound was covered with water dressing, there being no carbolic acid at hand. Directions were given to keep the dressings in a cool and moist condition by the occasional application of cold water.

On the next day (Sept. 15th) the boy's parents, being desirous of having their son more immediately under their own care, conveyed him home without our permission. He was taken on a cart over a hilly road, a distance of more than two miles. During the journey wine had to be given him on several occasions to prevent syncope.

On the following day (Sept. 16th) he was much improved. Carbolic acid lotion was now applied by Dr. Otterson to moisten the dressings.

September 18th.—To-day, in company with Dr. Otterson, I visited Stephen M. for the first time since the operation. He was in moderately good spirits, and complained of little save want of sleep. Tincture of opium ordered to be given at night if required. The wound was granulating freely, though the edges were in some places quite black. The parts in the neighbourhood were considerably swollen, and some portions of the skin presented an unhealthy blush. Most of the sutures were removed; but the ligatures, not being easily detached, were allowed to remain on the vessels. One strip of adhesive plaster was carried across the middle of the wound to prevent retraction of the edges; and pieces of lint, moistened with carbolic acid, were

applied. After this I saw no more of our patient; but I have learned from Dr. Otterson that, about three weeks after the operation, he had almost regained his strength and activity, and that the wound was nearly healed. I hear that he is at present attending school.

A case almost precisely similar to the above is described by Dr. King, of Glasgow, and in his paper he alludes to three others of a like character.* Sir W. Fergusson, in his excellent work on "Practical Surgery," gives an interesting account of the nature and treatment of such accidents, and refers to most of the cases which have been recorded.†—*Lancet*.

WESTMINSTER GENERAL DISPENSARY—TREATMENT OF SYPHILIS BY MERCURIAL FUMIGATION, WITH A DESCRIPTION OF A NEW AND CHEAP VAPORISER.

Under the care of Mr. CHURCHILL.

Cases of accidental inoculation of syphilis upon the hand of the Medical attendant, though fortunately rare, deserve to be recorded as beacons to warn the unsuspecting of the danger they incur by neglecting to use proper precautions to protect themselves from the possible absorption of syphilitic material through a crack or wound of the hand.

T. L., a Medical student, was attending occasionally at the Westminster General Dispensary, for the purpose of receiving instruction in the dispensing of medicines and the treatment of disease. He was particularly anxious to obtain some information with regard to the pathology and treatment of syphilitic disease, and with this view he had been allowed to watch the progress of treatment in selected cases, with the endeavour, if possible, to discover the changes in character of the primary sore. He had been in the habit of manipulating the sores, hoping to satisfy himself as to the distinctive differences between the Hunterian and the soft or non infecting chancre, and to ascertain how far it was possible for a soft chancre to become indurated, so as to resemble, if not to constitute, a true infecting chancre. It has been asserted by some authorities that a soft sore under irritation may become indurated, and, as such, a focus of constitutional infection. Those who discredit the dual character of the syphilitic poison also assert that a hard sore may produce a soft chancre on an uncontaminated subject, depending to a great extent upon the temperament or

* Cornack's Monthly Journal of Medical Science, p. 96, 1845.

† System of Practical Surgery, p. 302, 1870.

constitution of the individual infected. The assertion that hard sores are much rarer in females than males would seem, if true, to justify to some extent the doctrine of the unity of the syphilitic virus. All observers admit that sores which are to all appearance soft are occasionally followed by constitutional symptoms, and that sores of the true Hunterian type are not always followed by secondaries. Also, in syphilitised subjects, inoculations with matter taken from a hard sore will occasionally produce a sore resembling a soft chancre, but this the dualists affirm is not identical with the soft chancre. Supporters of the other doctrine admit that the poison of syphilis has developed into two well-marked varieties, which, as a rule, "breed true." "The two diseases are, for all practical purposes, entirely dissimilar, differing in symptoms, in prognosis, and treatment." (*Vide* Mr. Bradley's "Notes on Syphilis and on the Unity of the Syphilitic Virus," p. 38.) The only point that remains to be determined is, how far these two diseases, "entirely dissimilar," have divaricated, according to the evolutionary hypothesis, from a single original stock. That gonorrhoeal urethritis is, and always has been, a distinct disease, seems to me as certain as the admitted distinctions between acute and croupous laryngitis, although, according to some evolutionists, a "traumatic urethritis" was the parent of all forms of venereal disease.

The account T. L. gave of himself, referred to in the last issue of the *Medical Times and Gazette*, was as follows:—In addition to the ordinary routine work of a medical student in the dissecting-room, he had undertaken to assist the pathologist in post-mortem examinations; and while others carefully sucked or cauterised wounds inflicted during dissection, it was his boast that no harm had ever come from previous wounds. He supposed that his system was innocuous to the intrusion of septic particles or other products of decomposition. He had witnessed in others the poisonous effects of the absorption of deleterious matter; and though aware of the risk he incurred by dissecting with open wounds, he was, like many others, indifferent, because fortifying himself by a false hope. Surgeons of far greater experience, and maturer years, in their zeal to instruct, are perhaps unmindful of the potency of the syphilitic poison. Too great care cannot be taken to guard against the possible entrance of syphilitic matter by such unexpected channels. That the disease was not contracted by venereal indulgence was evident by the appearance of the primary sore on the palmar surface of the thumb, and the implication of the axillary glands on the left side, as also by the absence of any scar or mark on the penis and of inguinal

glandular swelling: last, but perhaps not least, was the evidence of the patient himself, who most positively denied that he had exposed himself in any way to the possibility of infection by impure or muliebral contact.

Unaware of the cause of the small blister on the palmar surface of the thumb, T. L., in his attempt to heal the sore beneath by bland ointments and lotions, was really fostering the development of constitutional symptoms, little suspecting that he would have the opportunity of studying (:) in his own person a disease the cause of which he was hoping more fully to investigate in others. He went to the sea-side for change of air, hoping that the follicular ulceration of tonsils and palate and the sore on thumb would heal as his health improved. It was not until his return to town that his suspicion was aroused as to the specific nature of the disease. It should be mentioned that he consulted about this time some surgeons of eminence; but whatever their suspicions may have been, no specific treatment was adopted. He was afterwards advised to take fifteen grains of iodide of potassium and four grains of Plummer's pill daily, and to dress the sore with black wash. About this time ulcerating tubercles appeared on the legs and back; an eruption appeared also on the scalp, and he lost a good deal of hair. The sloughs on the tonsil and palate were some time separating, and he suffered for about twelve months from sore throat. T. L. consulted Mr. Henry Lee, who advised the mercurial fumigation treatment, which was commenced at once—*i.e.*, as soon as the eruption became fully developed. He continued this treatment every night for three months, when it was omitted in consequence of all sores having healed, as also the sore throat. It was now the middle of winter, and he was unable to carry out effectively the mercurial treatment, on account of early lectures at the hospital requiring him to expose himself to the cold morning air. The sore throat returned, and he resumed the fumigation for another two months, when he was pronounced to be cured of the disease. For the successful administration of mercurial fumigation so much self-denial on the part of the patient is required, that he too frequently stops the use of the bath before the disease has been entirely eliminated from the system. Such a partial employment of the mercurial bath has given rise to a scepticism with reference to its efficacy as a powerful anti-syphilitic remedy. T. L., fully aware of the danger of partially curing his disease, carried out the treatment most systematically, and is now rewarded by the comforting assurance of a renovated constitution.

The plan adopted of administering the baths under the bed-

clothes, has two important advantages not possessed by the ordinary method of administration under a cane chair—viz. 1st. that the patient's body is placed in a mercurial atmosphere so long as he remains in bed: 2nd, that he is enabled to apply the fumigating process to the throat, larynx, nasal passages, and bronchial mucous membrane, by respiring the vaporised air for a limited time under the bed-clothes: 3rd, that the luxury combined with the greatly increased warmth obtained by this method of administration commends itself to the approval and satisfaction of the patient, not enjoyed by other methods. As a corollary, patients have been more ready to carry out to successful termination this method of treatment by mercurial fumigation. A cradle is necessary to support the bed-clothes, and raise them from the bath. For poor patients, unable to purchase a vapour bath, I have had constructed a metal tray for holding the water, with a raised portion in the centre, surrounded by water, on which the calomel is deposited. The tray fits into a watchman's "candle lamp." A spirit-lamp may be fitted into the socket made for the candle: and the



apparatus is complete. Hitherto, the expense of the apparatus has seriously interfered with the introduction of this powerful anti-syphilitic remedy among the poorer classes of society, who are, perhaps, more subject to the ravages of this destructive disease. The difficulty having been overcome, it is to be hoped that

the method of treatment will be more universally known and adopted. I have used this method of fumigation, and found it most successful in cases where the wife has contracted syphilis from her husband, and *vice versâ*. The process of cure may with advantage be carried out simultaneously. This vaporiser will no doubt prove of great service in the sick-room, and in pulmonary complaints, for fumigating purposes, and for volatilising drugs previous to inhalation. The apparatus complete, as shown in the figure, may be obtained from Messrs. Baker, surgical instrument makers, High Holborn.—*Medical Times and Gazette*.

Medicine.

THE USES OF THE UVULA.

By Sir G. DUNCAN GIBB, Bart., M.D., L.L.D.

It may be taken as an axiom in the animal economy generally that nothing has been created without a purpose and a use, although to our comprehension the use of many things may seem inexplicable. Nevertheless, when carefully examined and studied, bodies of trivial importance, and seemingly existing for symmetry or harmonious unity, in the mesial line especially, are invested with a good deal of interest and really practical importance. Such a one is the uvula.

Of this body we hear but little, unless it becomes the source of trouble through elongation or its participation in some neighbouring disease—such as inflammation and swelling. It was probably better known and appreciated as a part of some importance amongst the ancient Greeks and Romans, from the terribly severe measures resorted to when it became the object of medical interference.

In all anatomical and physiological works the uvula comes in for a very small share of consideration, a few lines sufficing to describe it as a small rounded process or conical prolongation of the mucous membrane, forming a sort of cul-de-sac hanging perpendicularly from the middle of the inferior border of the soft palatè, the *velum pendulum palati*, or *velum molle*. Perhaps more could not be said; but we look into its *composition*, its *situation*, its *relations* as a muscular body to neighbouring muscles of high importance, and its true functional uses—which have never yet been wholly understood,—we do not find it meets with the consideration it really merits.

We will first speak of its *composition*. Notwithstanding that it is spoken of by many persons and writers as simply a prolongation of the mucous membrane, it is a true muscular body, covered with the former, but having the remarkable peculiarity, in a considerable number of individuals, of possessing this membrane elongated at its terminal end, resembling somewhat the finger of a glove, partly off and partly on the finger of the hand to which it belongs. This becomes an abnormal condition which influences the voice, especially in singing, as much so as if it were a disease; yet it cannot be denied that sometimes, though very rarely, the true muscular end becomes elongated. The muscle which forms the substance of the uvula is known to anatomists as the levator or azygos uvulae, and consists most generally of two distinct muscles (notwithstanding its name) placed side by side in the middle line of the soft palate, although sometimes it is single. The latter is exceptional, for a distinct muscle of a fusiform fleshy character in some persons, in others a narrow slip of muscular fibres, is found to exist very distinctly on both sides, and to become blended at the terminal point of union at the tip of the uvula. Whether single or double, the origin is invariably from the spine in the centre of the posterior border of the hard palate and aponeurosis of the tensor palati; the fibres descend vertically close to its fellow in the median line, upon the nasal surface of the velum, and are inserted into the cellular tissue at the terminal end of the uvula. Its origin from the spine of the palate bones, or rather, as it is described by some anatomists, from the palatine aponeurosis, or *fibrous continuation of the septum narium*, necessarily invests it with considerable strength and powers of resistance, as shall presently be shown. It is, however, the most superficial of the palate muscles, situated on the posterior or nasal surface of the soft palate, and, with some mucous glands and cellular tissue, forms the uvula.

Such is a description of the uvula, which in structure is clearly muscular, separated in the origin of its two muscles above by a slight interval which would give them together the shape of a long spear. In stout fleshy persons I have frequently found distinct adipose tissue, in more or less abundance, situated at the tip or terminal end. When the uvula is bifid, the insertion of the muscle is separate and distinct in each terminal point.

The *situation* of the uvula perpendicularly in the centre of the soft palate corresponds with the depression at the root of the tongue known as the foramen caecum or frenum, between the valliculae, its point being in front of the epiglottis. It is not in contact, but still exceedingly close to the tongue. Yet in many

persons in whom the soft palate is more depending than is natural the uvula touches the tongue; and, if its terminal end becomes elongated, it hangs into the larynx, or so tixles the epiglottis as to cause it to become more or less pendent, when it then rests upon its lingual surface. There is a difference in the relative position of the soft palate and uvula in breathing by the mouth and the nose. When breathing by the latter, with the mouth shut, the situation of the uvula is pretty much as has been described; but when by the mouth, the soft palate is a little more elevated, and the tip of the uvula hangs perpendicularly over the centre of the opening of the larynx. This has been determined very accurately by a series of examinations and experiments upon various healthy persons; and, as I shall presently show, *vocalisation exerts a decided influence upon the position of both the soft palate and uvula.*

In its *relations* the uvula is connected anteriorly with the tendinous expansion of the levatores palati which spread out in the structure of the soft palate as far as the middle line, and posteriorly with the mucous membrane covering that part of the soft palate. It is also indirectly related to the tensor palati through its expansion in the tendinous aponeurosis, which is partly inserted in the raphe in the median line, in front of the levator palati. It is also contiguous to the palato-pharyngeus, although not directly in relation with it.

- *Uses of the uvula.*—According to the action of the muscle it is an elevator, and consequently shortens the uvula, and nothing more is said of it by anatomical writers. It is, however, a sentinel to the fauces, especially in the act of deglutition, for the moment that any substance comes into contact with it, whether saliva, fluid, or alimentary bolus, it excites to action all the surrounding muscles, until it is got rid of and the passage clear. But it possesses a function of certainly not less importance in *holding the soft palate tense and firm in the mesian line against the wall of the pharynx during the act of deglutition itself*, and thus prevents the passage upwards of any fluid or solid substance into the posterior nares. This might be considered a mere assumption were it not supported by the most convincing proof, as there is no opportunity of confirming its truth by inspection through the mouth. But it is otherwise when seen through the nose, and it was determined in the following manner:—A female, aged 36, lost the nasal bones, right turbinated bones and vomer, with part of the cartilaginous septum of the nose, through disease, leaving an external opening which she generally concealed with cotton wool and lint; the nose itself was otherwise natural. Through this opening a large cavity

was exposed, which permitted of a perfectly good view of the action of the soft palate from its nasal aspect during the act of deglutition, with or without food. Under either circumstance a double arch was seen, in the form of two convex swellings, held in a state of firm tension by the action of the uvula pressing down the centre of the soft palate, with its end resting flat against the wall of the pharynx. Here was the motor uvulae muscle, situated superficially, like a distinct band tied round the soft palate in its most important resisting part, to prevent the possibility of food passing upwards; and in this it was supported co-ordinately by all the neighbouring muscles concerned in the act of deglutition. This phenomenon was perhaps more perfectly visible during the swallowing of fluids than solids, yet it was always distinct with the latter or when no food was in the mouth, only in the last the prominence of the two arched swellings was not quite so great.

A number of observations were made, and experiments performed from time to time, yet they all tended to the same results, thus proving incontestably what was not hitherto known, that the uvula acted as a *point d'appui* in holding the soft palate tense in the middle line against the pharynx during the act of deglutition, at the same that it acted as a compressor of the soft palate itself. Its tension ceased the moment that the constrictors of the pharynx had fully exerted their influence over the fluids and solids swallowed. The strong attachment of the muscle in its origin from the palatine aponeurosis, or fibrous continuation of the soft palate, will readily explain the power the muscle possesses in compressing the soft palate, and meeting sometimes very considerable resistance in the passage of the alimentary bolus, or, may be, a large gulp of liquid. This compressing power would be incapable of exertion were it not the terminal end of the uvula strongly fixed against the wall of the pharynx.

Whilst the uvula thus has its special uses in the act of deglutition, it exerts a not less decisive influence upon the voice when uttered in a very loud tone, or in singing the higher registers, whether contralto or soprano in females, and tenor and barytone in males; then is its character as a *levator* or shortener clearly exerted, a use indeed that any one can readily demonstrate in his own person who has sufficient command over the muscles of his throat to allow him to see it. If this power of shortening or elevation is impaired by the removal of the whole or greater part of the free exposed *muscular* end of the uvula, then are the singing powers so seriously damaged that instances are known where a professional life has been ruined in consequence. Indeed, every true

singer is instinctively afraid of any measure being performed upon the uvula that will damage the true elevating muscular power which it is so well known to possess over the soft palate in association with the levator palati muscles.

In uttering the higher singing notes with the mouth open, not only is the uvula seen to be drawn upwards, so as to become almost invisible, but the soft palate is drawn backwards and upwards, diminishing the space between its posterior border and the wall of the pharynx, so that nothing can occur to interfere with the passage of the expired air in its readiest and most conveniently harmonious manner through the mouth. The movements of the uvula are exceeding rapid, and vary with the continuous or quavering character of the singing notes; in the shakes of the voice it is seen to be undergoing a series of short *ups and downs*, and at every inspiration in singing it descends, and as rapidly ascends, and keeps up until the note, prolonged or otherwise, is finished. These observations have been confirmed by me over and over again upon some of the first vocalists of the day. In females who possess the very highest singing compass, the uvula and soft palate are small relatively, and so exquisite is the power over the uvular muscles that the very point can scarcely be recognised when the highest scale is reached.

On the other hand, my observations upon the position of the epiglottis have shown that, if the expired air in vocalisation is directed *behind* instead of in *front* of the soft palate and uvula, through pendency of the cartilage, thus diverting the course of the current of air, harmony, power, compass, and range of voice in singing are damaged most seriously. The elevating motor power of the uvula scarcely or not at all exerts itself, because the proper and natural respiratory influence is not exerted.

The uvula, therefore, besides the important functions it possesses in the act of deglutition, has also its special uses in regulating the voice, and this by no means in an unimportant manner. That it does do this latter in an eminent degree is readily proved by what has been related, and confirmed incontestably—as, indeed, every singer well knows and fears—by the damage to singing powers when its free muscular end has been taken away. And here a few words may be said upon *elongation of the uvula*. As has been already stated, the true muscular end of the uvula very rarely indeed becomes elongated, but the terminal membranous end, containing mucous glands, and occasionally adipose tissue, does so frequently, giving rise to a set of phenomena which need not be described here. They are wholly removed by the operation of snipping off the superfluous membranous end, and no incon-

venience has followed in my experience of between four and five hundred instances. It is otherwise if a portion of the muscular end of the uvula is taken away; for if a single arch now exists as a consequence from one pillar of the fauces to that of the opposite side, instead of the heretofore double arch, then is the singing voice altered, and in deglutition occasionally fluids, and even solids, get up into the posterior nares, thus proving the correctness of the views already enunciated, that one of the uses of the uvula is to hold the soft palate tense against the wall of the pharynx during the act of deglutition.

One of the effects of an elongated uvula, whether composed of membrane or muscle, is an unnatural drooping of the soft palate, which hangs upon the tongue, the power of the tensor and levator palati muscles being somewhat impaired. The constant dragging of the end of the uvula downwards in deglutition, which is continually occurring involuntarily, independently of the act of eating, is one at least of the causes of this; and that it is so is proved by the removal of the loose, flabby, membranous end, which is followed by the elevation again of the soft palate. The removal of the whole free muscular end of the uvula will not, in itself, give rise to a nasal twang in a speaking voice, however mischievous it may be to the singing voice. If a nasal twang is noticed coincidentally with such a removal, it will be found to depend upon some other cause altogether.

The speaking voice is modulated by the soft palate and uvula, and the motor power of the latter is unquestionably exerted in pronouncing the letters k, q, and x, with their associations, more especially the gutturals of various languages.

The *uses* of the uvula may be summed up as follows:—

1. It acts as a sentinel to the fauces in exciting the act of deglutition when anything has to be swallowed.

2. It compresses the soft palate, and holds its posterior free border firmly against the wall of the pharynx in deglutition, so that nothing can pass upwards.

3. It modifies speech in the production of loud declamation and the guttural forms of language, by lessening or diminishing the pharyngo-nasal passage, when it acts as an elevator.

4. Its elevating power is increased to the most extreme degree in the highest ranges of the singing voice, and is very moderately exerted in the lower ranges.

5. Therefore, in its uses, deglutition and vocalisation are the functions that are intimately associated with the uvula, and both become impaired more or less if it is destroyed, wholly removed, or seriously injured.—*Lancet*.

Bryanston Street, Portman Square, Jan. 1872.

Canada Medical Journal.

MONTREAL, MARCH, 1872.

SANITARY REFORM.

In view of the present state of the country generally, which is acknowledged to be far from healthy, we have been induced to take up the subject of our sanitary condition chiefly with the object of drawing attention to the best measures for remedying the evil. It is needless our attempting any reform in separate localities, because any action however wise, or however forcibly backed up by scientific opinion, yet lacking the authority of law, cannot be enforced.

It appears to us that what we need is legislation, without which our hands are tied, and we can stand and look on at the spread of epidemic disease, but are unable to arrest its progress. It is humiliating to make such an admission in this 19th Century, but however humiliating it is nevertheless true. True as regards our country Canada, and why? because we possess no restrictive enactments, no system of registration, no compulsory acts, no nuisance removal acts, nothing in fact which civilized communities generally seek for and obtain, the benefits of which have been fully recognized by mankind since the days of Moses.

We have received a private letter from an esteemed confrere in St. John, N.B., in which amongst other matters he observes:

"I am glad to see by your last Journal, that you are discussing the propriety of having a General Board of Health for the Dominion. One is much wanted. We had an excellent Health Law for this Province before Confederation, but after the Union the quarantine regulations were taken out of the hands of the Board of Health, since which a good deal of confusion has arisen. I need not say to you that *all* sanitary matters should be under the Board of Health. As it exists in St. John, such is the case, except—as I said before—the quarantine regulations. But we have not power to enforce a registration of Births and Deaths, which is much wanted."

This we fully endorse, and we think that before attempting reforms which are needed, we must first obtain from the Legislature the power of enforcing them.

Our registration system is defective, in fact absolutely useless. In Montreal we have had a Sanitary Association, composed of

Physicians, Builders, Architects and Artizans, and the only result which has followed the deliberations of that body was the assertion that Montreal was the most unhealthy city on the continent of America. Although we have not fully acknowledged the correctness of the views set forth by that association, yet we freely admit that there is a larger mortality in our city than there should be, and further that under other conditions much of the disease is preventible. To arrive at the causes of our mortality, we have to examine the condition of our people, and more especially that of the labouring classes.

Montreal is built on a series of terraces which gradually rise from the river side to the foot of our mountain, an ascent in the aggregate of over 400 feet. So that as far as drainage is concerned it possesses in this respect every natural requisite. We are not cramped for room, as the island of Montreal is some 35 miles in length, with a depth varying from six to twelve miles, and we are surrounded by the Ottawa River, which is broad, rapid, and in many places of considerable depth. During the past few years the city has grown rapidly, and the capital of our moneyed class is embarked in industry, and factories of all kinds are to be found giving employment to thousands. But if the men of capital have in the proper spirit of enterprise started factories, they have failed to provide the means of properly housing their employees. In consequence of the greater opportunities of getting employment a large number of skilled labourers have been attracted to our city, but finding it difficult to procure dwelling locations at prices within their limited means they are forced to crowd into tenements which have been erected in back yards, where the light of the sun seldom makes its way, and in some instances has never shone, or perhaps in cellars, which were never built for any other purpose than for storing wood or coal, but which are found to be more remunerative to the owners as human habitations.

What is the result? to the operative such a condition of things is sufficiently injurious, but inasmuch as he does not occupy his lodging more than one-third of the natural day and 24 hours, the effects on his constitution are more slow in their development, but equally certain—he eventually breaks down and dies of Phthisis or some other form of disease induced by want of a pure and healthy medium wherein to breathe. To his wife and little ones however such surroundings are more rapidly fatal, and they sink exhausted for the want of the pure air of heaven, which is in such abundance, and has been vouchsafed to us all. But this is not the only source of death and disease in our city, although we believe it to be the chief source of our infant mortality. Take a child

suffering from exhausting diarrhoea, during the process of dentition, and simply send it across the river to one of the country villages, and mark the change even within a few hours. What is a source of misery to the poor man, must affect the rich, and hence we observe that :

“In the perfum'd chambers of the great,
Under the canopies of costly state,”

the grim messenger will occasionally make his appearance, and claim his victim.

But as we observed, there are other sources of disease or rather other causes of mortality in disease than overcrowding.

Some little stress has been laid on the lack of sewer ventilation, and we think there exists good grounds for complaint. The question of sewerage has always been a perplexing one, and how to dispose of sewage in large towns. We should fancy that a large river like the St. Lawrence, in front of Montreal, which runs at the rate of five miles an hour, is not likely to be affected by the sewage of the town if it were three times the size; but independent of the injury likely to accrue to the river, people will estimate the immense loss of valuable irrigation matter which is simply got rid of, and which might be utilized—true, but then this system of utilizing sewage cannot be carried out without danger, as has been proved at Croydon, in the vicinity of London, and other localities. This is a subject in itself so vast, that we cannot go into it at the present time, besides it is somewhat foreign to our argument. We have started with the purpose of trying to ascertain the causes which affect our mortality, and especially the infant death rate which is unquestionably high.

The high rate of death amongst infants in this city, appears to be due to our generally defective sanitary condition, and not to any one of the numerous causes which have from time to time been alleged. Over-crowding in the houses of the poor is a fruitful source of the death rate, this is more especially observed in the houses of the poorer class of French Canadians. The existence of defective drainage in certain localities, or of old cess-pools, or even where neither of these conditions is met with, as in some of the better class of houses, the sewerage pipes actually worn out, and if examined would be found in a honey-combed state.

From a recent paper published by Dr. Andrew Fergus, of Glasgow, it would appear that the duration of a leaden soil pipe to the ordinary water closet varies from a minimum of eight to a maximum of twenty years: Dr. Fergus has during a series of observations extending over 15 years, proved that leaden soil pipes become perforated along their upper surface—this condition he

found was occasioned by the action of noxious gases from decomposition of excreta generated within the pipe, the perforations are invariably situated above the water line. "The practical lesson to be drawn from this," observes Dr. Fergus, "is that any house no matter how well and carefully built, may become unhealthy from this source, and that wherever there are cases of typhoid fever, diphtheria, diarrhoea, &c., the pipes should be carefully inspected."

From the paper above referred to, Dr. Fergus states that the diseases arising from a defective state of soil pipes are Typhoid Fever, Diphtheria, Scarlet Fever, Diarrhoea, Cholera, and further more that every case of the above diseases which he has recently attended, when a thorough inspection was made, he has been able to trace either to this source, or to some other form of excremental pollution. As a remedial measure he suggests the following:—

"1st. That all soil pipes should be carried up to the roofs of the houses, and left quite open to the external air; and, if possible, the soil pipe should also be used to carry off the rain water from the roof. The landlords would be more than compensated for this expenditure by the increased duration of the soil pipes.

"2nd. Water for domestic use should be taken from the main.

"3rd. Where cisterns are still in use, a charcoal cage, to be refilled from time to time, should be placed in the overflow pipe; or, better still, the overflow pipe might be carried to the outside of the house, and not pass into any drain.

"4th. All over the city, and specially at the higher levels, the sewers should be connected with the furnaces of some of our large public works. More than three years ago I proposed that this should be done, so that all the foul air from the sewers might be burned.

"But all these would be mere palliatives. I hold that the only true sanitary solution of the question is, that provision be made that all excreta and organic refuse shall be kept out of the sewers and water courses."

OBITUARY.—It is with deep regret we notice the death of William Lovat Fraser, Esq., L.R.C.P. Edinburgh, and L.F.P. & S., Glasgow. This sad event occurred at Bussorah, Turkey in Asia, on the 28th December last, and we believe the particulars have so far not reached his family.

This promising young man was the son of Dr. William Fraser, of our city, the learned and respected Professor of Institutes of Medicine, McGill University, and we tender our worthy colleague and family a true heart-felt sympathy in their bereavement.