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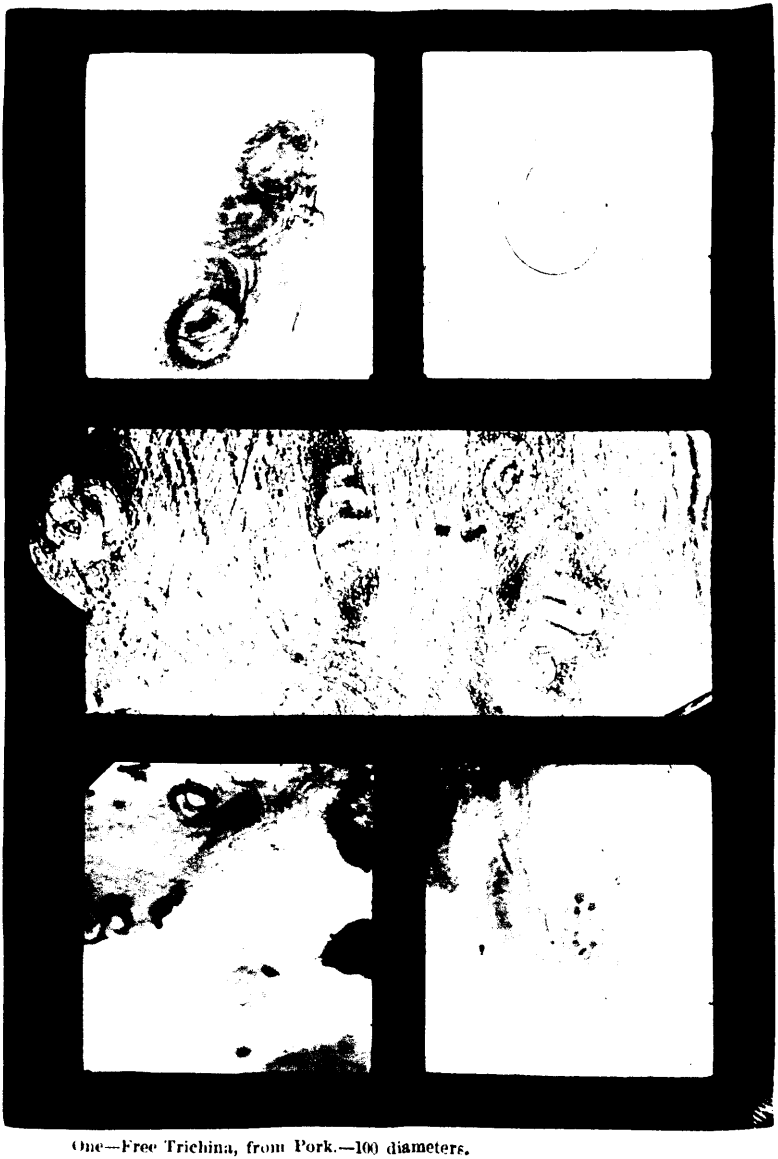
MICRO-PHOTOGRAPHS OF TRICHINA,

TAKEN FROM PORK AND FROM HUMAN MUSCLE.



One—Free Trichina, from Pork.—100 diameters.

Two—Single Trichina, from Human Muscle.—150 diameters.

Three—Trichina embedded in Human Muscle.—150 diameters.

Four—Trichina encysting; from Pork.—80 diameters.

Five—Trichina fully encysted but not calcareous; from Pork.—50 diameters.

CANADA

MEDICAL JOURNAL.

ORIGINAL COMMUNICATIONS.

On Microscopic Examination of Flesh for the detection of Trichina. By J. BAKER EDWARDS, Ph. D., F. C. S., late Lecturer on Chemistry and Medical Jurisprudence at the Royal Infirmary School of Medicine, Liverpool, England. (With Photograph.)

The attention of the medical profession in Canada, has been recently called to the detection of Trichina by the occurrence of two fatal cases of Trichiniasis in Hamilton, Ont., and of several cases in Montreal, of a more protracted but less serious character, and an enquiry has been instituted by the Board of Health in Montreal, as to the existence of this parasite in the pork offered for sale in the public markets, and as to what steps can be taken by the authorities to protect the public from the sale of meat so infested.

The report of the commissioners appointed to investigate the subject states that no Trichina were discovered in the forty samples examined, and the failure on the part of some medical men to discover any in the portion of ham which gave rise to the illness of the family in College street, has raised some doubts as to whether the diagnosis could have been correct. This has been permanently settled by incisions into the painful muscles of two of the patients, from whom portions of muscle were extracted and living Trichina found therein. The differences of opinion which have been expressed in relation to these cases, proves how little the scanty literature on the subject of Trichina has been read and how easily such cases may escape professional recognition, where no fatal results ensue.

These cases will be fully entered into by Dr. Bessey, I shall therefore confine myself to a history of the examination.

On Good Friday, March 26th, I received from Dr. Bessey a slice of ham which he informed me was next in cut to a portion which had been eaten by several persons on the previous day, and caused serious illness.

He wished a special examination for Trichina. During the same afternoon and evening I examined a number of thin sections mounted in glycerine, but could find only one satisfactory specimen. In the morning I re-examined some of these mounts and found a group in one slide. These were examined by several friends who confirmed my observation. During the evening with the assistance of my friend Mr. A. S. Ritchie, I washed a portion of the muscle out with ether, drying it with pressure on filter paper, so as to extract the fat globules, and then mounted thin portions in Canada Balsam. On subsequent examination one of these was found to contain a numerous group of Trichina both in a free and encysted state, but quite transparent, and out of from 50 to 60 slides examined, about 5 or 6 contained Trichina. The photograph No. 1, shows the Trichina in a group and in a free state; at least 3 or 4 are here travelling in company up the muscle. No. 4 shows a number in the edge of the muscular band both above and below. On the slide from which this is taken, 13 may be counted under the field of the microscope at one view. The position and nature of the worm within the cyst in the centre of the field is very curious; his cyst is perfectly transparent, but it arrests polarized light, so that while the surrounding muscle polarizes freely, it remains unaltered, except in the anterior portion which is protruded from the cyst, as if it were a gelatinous mass, through which the head may pass freely in search of nourishment. The attitude of this creature appears to be that of feeding on the portion of muscle into which the head is inserted, and the portion thus protruded from the sac polarizes light, like the surrounding muscle. Figure 5, is the completely encysted worm, horizontal section, showing six apparent stumps which prove that the worm lies in *three* convolutions when it has attained its full size. In no case were the cysts found to be calcareous, and its seems probable that they only become so after laying a very considerable time in the muscle.

Nos. 1, 4 and 5, were all taken from the pork in question, and show that the worm existed in various stages of developement, and especially those early stages where rapid growth would ensue if carried into the stomach and intestines.

No. 1, is magnified 100 diameters. Nos. 4 and 5, 50 diameters. Nos. 2 and 3 are 150 diameters. The centre photograph represents a portion of human muscle from the last fatal case at Hamilton. Two generations are visible in this muscle, those in the spiral form being a young generation marching past, while the upper curl on the right is the only portion in focus of a large worm which lies closely curled, and is slightly encysted.

No 2—Is the worm picked out by needles from the Hamilton muscle

but probably not of full size. Those obtained alive in Montreal, were some of them about double the size of the above.

These worms are believed to be hermaphodite; when therefore one becomes fairly attached to the lining of the stomach or intestine, it throws off brood after brood for an indefinite period, and as the young will naturally issue from about the same spot, it follows, that one generation after another will swarm up the same line of muscle and overtake each other on the way. It is probable that a thousand or two of young worms are thus put on the same track by one breeding individual. The next swarm may be an inch or two distant, and these again work up the muscle in company; hence it follows, that here and there in a body thus infested multitudes will be found, while other muscles and considerable portions of flesh are unaffected. As a matter of observation wherever the worms are found they are in close company, while other portions of the flesh contain none. We may therefore expect to find but occasional groups in a transverse section of muscle, or of flesh, while in an infected muscle laid longitudinally we shall find continuous multitudes if we find any.

The flesh should therefore be examined, by dissecting out the muscle lengthwise, and examining it under manipulation with the erecting eye piece, for which purpose a $\frac{2}{3}$ or $\frac{1}{2}$. in. object glass will be found most convenient. For examination under polarized light, Canada Balsam is the best medium for mounting, but for general examination of structure I have preferred a mixture of one part glycerine and one part aqueous solution of carbolic acid. I surround this with Deane's Gelatine forming a cell, which is secured by a coating of shellac varnish. The best illumination is by the smallest diaphragm in the Achromatic Condenser, and the structure is best seen by a half inch object glass and high eye piece.

The worms are with some difficulty removed from the muscle, they are found in every conceivable twisted form, and although usually motionless, in one or two cases they have been seen to change their position after being mounted some hours in the Glycerine. In one of the cases at Hamilton fatal in 3 weeks, one of the worms measured 1-30th inch; those obtained from the pork were about the same size; the one shown in fig. 2, from the second case, fatal in 6 weeks, the worm measures 1-20th inch; while those taken from the living patients 2 months after the pork was eaten are the largest we have yet seen and measured.

It would therefore appear that while free they continue to grow in the muscle for at least 2 months; they probably then begin to encyst, but neither in the Hamilton or Montreal cases, nor in the cases recently reported in Chicago have any been found thoroughly encysted, and it is probable that the calcareous deposit which renders them opaque and

therefore visible, does not form under a period of 12 months. It is therefore only observed in cases where the disease has been long outlived. These calcareous cysts, however, are capable of ready solution in the gastric juice, and the worms soon become active even after years of dormant existence. The varying character of these cysts, may probably determine the period at which characteristic symptoms declare themselves. In those cases where the worms are to any extent in a free and un-encysted condition we may expect these symptoms to be manifested in a much shorter period than when encysted, and probably be accompanied with more gastric irritation. It is also possible that some of these, young as they are, enter the muscle in an impregnated condition. Cases in which pork has contained myriads of old encysted Trichinæ have been well studied in Germany and in New-York, and it is hoped that these Montreal cases will contribute to our knowledge of the disease, in an earlier and less formidable stage of developement.

Trichiniasis being an abstract of an essay submitted to the Medical Faculty McGill University for the degree of M.D. C.M. By THOMAS D'ARCY LUCUS.

The present era of the world is emphatically an era of progress, an era of growth and developement, an era in which the human mind having emancipated itself from the trammels which had so long fettered its free action, having thrown aside the narrow views and prejudices of former ages, having burst asunder the barriers which false notions of men and things had reared, has at length begun to think for itself in every department of knowledge.

Mankind had long enough submitted with servile obedience to dogmas which a wider range of investigation had proved to be fallacious. The cobwebs of error were at length to be swept away from the wall and the freed intellect, raised to its true position, was to soar aloft on the pinions of its own innate capacities to a nobler height than was ever dreamt of in the wildest dreams of the old philosophers.

From amid the mouldering graves of older thoughts and older ideas a new light was to burst forth upon the earth, an edifice of fairer and more majestic proportions was to be erected, which combining the pure logic of the Aristotillian school with the progressive spirit of the Moderns, was to open up new avenues of enterprise to every condition of human life, and scatter blessings along the pathway of every one who honestly endeavoured to grasp them.

Nor has this progress been confined or limited to any one sphere but has permeated all branches of industry, all science and all art; has sent the traveller forth to discover new countries and the astronomer new worlds. Its influence has affected all classes of society, the learned and the illiterate, the sage and the savage. Man actuated by it has measured the height of the loftiest mountain and delved deep down into the inmost recesses of the earth, has discovered the gold of California and the diamonds of Brazil, has mapped out the heavens and numbered the strata of the earth, has made the lightning subject to his will and utilized the most worthless refuse of the workshop. Its spirit is every where at work, in the silent labors of the student, who, by his midnight lamp is striving to evolve new problems from the hidden secrets of nature, or to find the key to those mysterious laws which the wisest of his predecessors were unable to unlock. Nor has this spirit been confined to the immaterial world, nor to abstract speculations on the origin of matter. It is every where abroad, in the busy active multitude, who, with ready hand and resolute heart are devising new schemes for the civilization and enlightenment of the world, who are building our railroads, digging our canals, founding our cities, endowing our colleges and making the wilderness blossom like the rose.

As a mighty moral agency too, its influence may be seen and felt in all the varying phases of human existence, in improved systems of education, in wide spread plans for the relief of the necessities of the poor, in more liberal forms of government, and in adding to the comforts and happiness of the millions of our race, who for centuries where treated with scorn and contempt, or trampled to the very dust beneath the feet of their more fortunate fellow mortals.

The world is growing older and wiser, but it must be acknowledged that it has been doing so from the beginning. There have been times, indeed, when the deadly blighting mildew of ignorance and superstition, seemed to envelope all the domains of human thought, seemed almost to destroy every vestige of the accumulated lore and wisdom of past ages seemed almost to bury in eternal oblivion, all that genius and experience had been able to gather from the labors and researches of the master minds of our race. Yet these have been, as it were, only breathing spells during which the intellect of man was recuperating its exhausted powers, for entering the lists once more with renewed strength and energy.

All sciences and all professions have had to encounter this severe struggle, have had manfully to face the foes who surrounded them on all sides and sought to bring them down to their own level, sought to mingle

the dust of earth with the heaven born aspirations of the earnest seeker after truth. In no profession has there been such bitter opposition to grapple with and overcome as in that of medicine and surgery. Its origin took place in those remote ages which are antecedent to all written records, in the very morning of history, in the primæval period of our race, in fact when the first cry of human suffering was heard, when the first wail of misery or woe was uttered by human lips, when the first moan of anguish or of pain was wrung from one human heart, there and then did the first physician enter upon the functions of his office. Founded upon the study of man's physical and moral nature in health and in disease, and taking its stand on the eternal principles of honesty and truth which lie at the root of all science it has had to contend against enemies greater in number and more determined in their efforts than any or all other professions from the days of Hippocrates to the present period of time.

Beginning with the cradle and ending only with the tomb, every being has a direct interest in maintaining its rights and defending them from the attacks of unprincipled men. Yet it has been assailed and is yet assailed as vehemently as in the days of old, by favourite theories. Pseudo-science and Pseudo-philosophy have in vain hurled their thunderbolts of Homeopathy, Hydropathy, etc., against it, but appealing to a higher model of excellence than the ignorance of the crowd, or the sympathies of the vulgar, it has banished the disciples of Hahnemann or Broussais with as much ease as the quacks of the older time were disposed of.

It has not been like some sciences or would be sciences the creation of any one man, or of any set of men, but founded on observation and experience has pursued the even tenor of its way through a long series of years. Amid the changes and revolutions of nations, the rise and fall of rival states, the temporary popularity and decay of false creeds, both in religion and science, it has steadily gone on adding something to its knowledge of diseases and their antidotes, from every race, and almost from every individual who have played their parts on the ever shifting stage of time. Its onward progress may be fitly compared to a noble river whose waters are daily increased by numberless streams, creeks and rivulets, till that which was in the beginning small and mean, becomes in the end grand and majestic, an object of wonder and admiration. As we look back to the first faint dawn of its history, we behold it a secret carefully hidden in the breasts of Egyptian priests, or confined as a precious legacy in the family of Æsculapius. We might even trace its history back to an older source, to the more ancient nations of the East, the primæval founts of knowledge, the mighty races that even then had

passed away for ever, leaving only the monuments of their genius and skill behind to prove that they had ever existed. However it was in that land which abounded most in beauty of form and wealth of intellect, in that land of poets and philosophers, among that people who seemed to have had complete control over the empire of letters and of thought, in a word, in Greece that it was first properly elevated to the rank of a science and a termination put to the squabbles and confusion of the "Empiric" "Methodic" etc. schools, by the immortal Galen of Pergamos.

Receiving constant additions with every step that knowledge gained, much new light was thrown upon it by that remarkable people, who emerging from the deserts of Arabia and inspired by the novel enthusiasm of a new faith-spread their victorious arms throughout Asia, Africa and Europe. The Arabian mind differed much from the Grecian. The former lacked the calm logical power, the facility of tracing effects to their causes, the analytical capacities of the latter, but was its equal in imagination, that wondrous faculty, which clothes all objects with a richer and more gorgeous hue, which perceives almost by instinct the truths which others arrive at only by the slower processes of reason, and the Arabian was far superior to the Greek in energy and earnestness. The doctrines of Mahomet "which had elevated a whole nation from a degrading and debasing idolatry to a knowledge of the true God" had infused into their hot southern blood a zeal and determination which overcame all the obstacles of science as well as of arms. They consequently erected on the ruins of the older systems an empire of letters which adds more to their glory than their bloodiest victories or their greatest conquests. Avicenna was for a time esteemed higher than Galen, and in his person Arabian researches in this field attained their highest perfection. But it was under the clear blue sky of Italy, in a city fanned by the warm breezes of the Mediterranean, amid the decay of an older civilization that the Mediæval schools of medicine and surgery reached their utmost developement. While the rest of Europe was buried in the very midnight of the dark ages, while only in the rude cell of some solitary monk burned yet the feeble taper of learning, under the rule of the Northmen who wrought such wonders and were the revolutionizers of Southern Europe's effete nationalities, flourished in lonely grandeur, the Medical school of Salerius, the forerunner of others still greater. The advancing tide of civilization, the revival of learning consequent on the downfall of Constantinople, the enlightened patronage of several popes and the great impetus given to both arts and commerce by the rounding of the Cape of good Hope, and the discovery of America,

all exercised an influence in advancing this as well as other studies. The fearful pestilences which swept like devouring scourges or torrents of desolation through every land also added their quota to the stores of information. The profession began to assume a loftier position—began to be separated in the opinions of the ignorant from the charons of the Magician, or the calculations of the astrologer, until now the medical man who really does his duty is looked upon as a benefactor to his fellows.

Surgery, it must be acknowledged, has made even more rapid strides. Operations which formerly baffled the skill of the most distinguished of the profession are now things of daily occurrence. The most varied forms of desease are now quite thoroughly understood and a cool brain, a firm hand and suitable instruments are able to accomplish things which in days past would have been regarded as miracles.

During the past fifteen years the subject of human entozoa has received considerable attention from Continental, English and American Pathologists and at the present period of time our knowledge in this department of science is nearly as fully established as in most other branches of the healing art. It has been found that some of these parasites, like the ascarides and the teniæ, are introduced into the alimentary canal in the egg state and can remain there without causing any very serious trouble. One of the human parasites, however, the Trichina Spiralis is by no means so harmless an inmate. Ingested in a semi-developed condition it soon produces a legion of young which do not remain in the locality of their birth, but start at once for another situation in which the second stage of their developement is accomplished.

Millions of these larval trichinæ liberated within the gastro-intestinal canal perforate its walls, and then either by the aid of the circulation or by the process of vermiculation reach the voluntary muscular tissue throughout the body. The irritation produced by this numberless progeny may be sufficiently severe to cause a violent fever and even death. During some of the epidemics in Germany twenty-eight per cent of the cases proved fatal (Leuckart) and hence considerable attention has been given by the profession to the Natural History, Anatomy, and Physiology of this remarkable worm.

The importance of the subject no one can deny who has read of the numerous and fearful outbreaks of the disease on the continent or of any of the veritable epidemical propogations of trichina in different localities of most of the countries in the world. The great improvement produced by ascertaining the pathological course of this disease by Zenker is destined to be to the human frame what Jenner's discovery of Vaccination has been and will be to the human features.

The Trichinal or Trichinatous disease or Trichiniacis is a helminthic disease, attended with fever, running a definite course and produced by the introduction into the system of an innumerable number of entozoa called Trichia spiralis.

The worm itself, was named by its discoverer the Trichina spiralis—Trichina, the generic portion from a Greek word, for a hair, in allusion to its minute filiform shape—spiralis, the specific part from the Latin word " Spiralis " on account of its assuming a watch spring like appearance after it has undergone encapsulation. The peculiar appearance presented by the tail has induced M. Davaine to name it the Pseudalius Trichina.

The fact, that a knowledge of what was known of any department of science during the past adds to the interest of him who investigates it, being generally conceded the prominent circumstances connected with the history of this worm demand a brief consideration. It is now claimed by the Jews and some Helminthologists, that the existence of the Trichina in the flesh of the swine was known to Moses fifteen hundred years before the Christian era; but a careful reading, by an unbiassed person, of the narrative as given in the first seven verses of the eleventh chapter of Leviticus, conveys no such information in any of its bearings.

The first recorded notice of the cysts of the Trichina spiralis was made by Tiedman in the year 1822. Ten years subsequently these cysts attracted the attention of Hilton of Guy's Hospital, London, but were regarded as nothing more or less then muscular degenerations. The honor of having discovered this entozoon itself is due to Mr. James Paget who in the month ef February 1835, sent portions of the muscular tissue of the subject he had just been dissecting and in which he had seen the worm, to several distinguished Microscopists in England. Soon after, Professor Owen, to whom a portion of the flesh had been transmitted, furnished the public with a partial description of the worm. After a few months more had elapsed, Dr. Farre described its organs of generation and Intestinal canal. Herbst in the year 1845 ascertained the existence of the worm in a cat. But a discovery second to none other, except perhaps, that by Paget was made by Prof. Liedy of Philadelphia who in the year 1846, ascertained its existence in the flesh of swine. The Theory held by many Pathologists—that of spontaneous generation—was at this time abandoned, a direct means of communication being established. In the latter part of the year 1859, Leuckart ascertained that the worm after being introduced into the stomach of an animal became freed from its cyst and increased rapidly in size. But the subject was considered merely as a scientific curiosity rather then one of pathological

interest by all experimenters until Zenker of Dresden on 12th of Jan., 1860, ascertained the nature and source of the disease. Virchow of Berlin and Leuckart of Giessen have also given their quota in the furtherance of this subject.

The Trichina Spiralis belongs to the class of encysted entozoa. Its favourite habitat is the striated (Voluntary) muscular tissue where it becomes encysted and remains for years in a semi-developed condition, until either calcification takes place, or the animal which it infests is used for food. In the encysted condition the average length of the worm is $\frac{1}{3\,5}$ of an inch and the $\frac{1}{5\,5\,0}$ of an inch in its central diameter, (Zenker). Each of these ovoid cysts, in which the worm may be seen coiled up like the spring of a watch, really consists of two distinct portions, the internal more delicate membrane immediately surrounding the worm and an external coarser covering lying in contact with the tissue of the body, of the bearer. The distinction between the inner and outer coverings becomes less marked as the age of the cyst increases, until at length the Trichina appears to be contained within a single cyst. While these changes are going on in the structure of the cyst, its outline assumes a different form, from being ovoid it becomes more spindle shaped. The consistency of the envelope increase in proportion to the thickness of the outer covering. Generally but one entozoon is contained within a single cyst, but examples have been given in which two or three were found. While in the encysted condition the worm is said to be non-sexual; the Intestinal canal occupying the greater part of the cavity of the body; the larger and less pointed extremity contains the arms; the more attenuated extremity corresponds to the head. After being taken into the stomach of an animal, the Trichina is freed from its cyst by the solvent power of the Gastric juice; it next passes into the small intestine where it increases rapidly in size, its sexual apparatus being now recognizable. A full grown female Trichina is about $\frac{1}{1\,0}$ of an inch in length.

The generative apparatus of the female Trichina occupies somewhat more then one half of the cavity of the body. It appears to be made up of an elongated sac, the blind extremity being a little in front of the anus and the outlet at the posterior termination of the first fourth of the body. It is divided into a secreting or greater portion and a receiving or lesser portion, which occupies the anterior part of the apparatus, serving as a receptacle for the eggs and young Trichina, the former having its analogue in the ovaries, the latter in the uterus. The Intestinal canal begins with the mouth in the attenuated extremity of the worm, and consists of a series of cells occupying the anterior $\frac{3}{5}$ of the body, and of a tube filling the space left by the generative apparatus in the posterior $\frac{2}{5}$ of the cavity.

The generative apparatus of the male Trichina consists of a tube which begins in a cul-de-sac a little in front of the anus, the outlet is situated at the posterior termination of the second third of the body; here it doubles upon itself and returns towards the anus where there may be seen a pouch filled with sperm cells. The digestive apparatus is similar to but occupies a greater relative space than that of the female. A full grown male Trichina is about $\frac{1}{50}$ of an inch in length—much smaller then the female; they are also much fewer in numbers.

In the course of two or three days the trichina become sexual at which period copulation takes place; when the embryo arrives at the opening of the uterus it passes out and begins its peregrinations. Having reached the muscular tissue it becomes furnished with an alimentary canal, grows rapidly and ultimately attains the proportions before stated; they now become encapsulated, assuming a state of hybernation, as it were, and after bringing forth their brood the parent trichina pass off with the fœces and perish.

There are no accurate means of ascertaining the precise number of larval trichina present in a single "bearer" at any one period of time; the number is evidently extremely variable, but as an approximation, the following calculations may be made. Prof. Dalton counted 29 trichinae in a piece of human muscle measuring the $\frac{1}{50}$ of an inch in thickness and the $\frac{1}{12}$ of an inch square; these measurements are equivalent to $\frac{1}{7200}$ part of a cubic inch, a cubic inch of muscular tissue weighs about half an ounce, there would thus be in one ounce of flesh thus affected 417,600. The voluntary muscular tissue, according to some, weighs four tenths of the entire body, supposing all parts of this tissue to be equally infested there would thus be in an adult male weighing 180 lbs, 72 lbs. or 1152 ounces of such tissue and hence 480 384,000 trichina.

Leuckart estimated that an ounce of the flesh of a cat examined by him, contained 325,000 trichina, if the muscular tissue of the human body were equally infested then—in accordance with the about data, there would be in a single "bearer" 481,075,200.

As further illustrative of the subject the following may be stated, Prof. Dalton counted 12 trichinae in a piece of ham containing $\frac{1}{7200}$ of a cubic inch, this would be equal to 86,400 to the cubic inch or 172,800 to the ounce or 2,764,800 to the pound; a laborer consuming one pound of ham per diem for four days would thus have introduced into his stomach 11,059,200. The gastric juice, succus entericus and pancreatic juice, have the power of dissolving the cysts in which the trichina are contained; when this immense number of trichinae, now liberated from their encysted asexual condition, undergo the changes previously stated. Each female-

trichina according to Virchow furnishes a brood of 200, of 400 according to Gerlach, Virchow and Leuckart places the number in each brood at 1,000, the average between these three authorities being about 533, supposing $\frac{6}{7}$ of the trichina introduced into the stomach to be females there would then be 816,818,433 trichina ready to enter on the destruction of the unfortunate bearer.

Causes of the disease.—Any substance is a medium of communication in which living larval trichinae exist, if introduced into the stomach, and will produce the disease the severity of which will depend, usually, on the number of trichina, and the general state of health of the patient; in man it is nearly always caused by eating undercooked pork; other animals in which it has been found are the cat, mole, crow, hawk and jackdaw. That a person can become infested by eating underdone beef can no longer be denied; eleven cases are already on record. Ruppercht ascertained it be a medium of communication in eight cases, Simon in two and Dr. Percy, of New York, in one. But when the ox or any other vegetable feeder becomes trichinized it is always due to accidental circumstances.

On the authority of Leuckart, Virchow, Lewker and Stecher the following are arranged as showing the liability to artificial trichinization. *Very easily infected,* guinea pigs, mice, hogs (*domestic, wild boar*) rabbits and hares, cats and eels. *Easily infected.* Beetleflies. *Infected with difficulty,* calves, sheep, cows and roebucks. *Infected with great difficulty,* oxen, bulls, she goats, dogs, foxes. *Not infectable,* crabs, he goats, fishes amphibia and birds of all kinds.

To ascertain the comparative frequency of pork being trichinous, investigations were made by the Chicago Academy of Medicine, as the result of their researches, it was estimated that two per cent of those brought into that market were affected more or less with trichiniasis! The result of the compulsory inspection of pork in Germany from December 1863, to November 1865 showed the per centage to range from $\frac{1}{10}$ part of one per cent to 4 per cent.

The question, has the disease existed from the most remote period of antiquity naturally suggests itself for consideration. Without occupying space and time in the consideration of this subject the opinion of the ablest pathologist of the present day may be accepted. Virchow holds that the flesh of the swine has always, been affected with trichina to a greater or less extent, and gives as an explanation of the greater frequency of the disease during the past few years, "The imperfect cooking compared with former times."

It cannot be questioned that prior to the description of the pathology of the disease by Zenker some of the cases set down for rheumatic and

typhoid fever were undoubtedly cases of trichiniasis. With regard to the frequency of the disease in man, Wm. Turner, M. B., senior demonstrator of anatomy in the University of Edinburgh remarks; "I am disposed to look upon it as much more common than is generally supposed, between one and two per cent of the bodies which have come under my observation during the last five years having been so affected (Edinburgh Medical Journal, 1860, pp. 216). On the authority of Virchow, the worm is found in two per cent of the subjects brought into the Dissecting rooms of Berlin.

Recent observations have convinced me that a subject brought into the dissecting room of McGill University during the session of 1866–67 was trichinized. The peculiar white speckled appearance of the muscular structures and the difficulty of making a respectable dessection were very obvious.

It has been proposed to keep meat for a long period in order to obviate the fell effects of the poison, but the results of the experiments made in Germany and India show that the trichina would not be rendered inert by the adoption of this plan. And Davaine's experiments are conclusive on this point and show that although the adult worms survive, but for a short period, yet the larval trichina will live for a long time in flesh which has already undergone putrefaction."

He further observes that "the debris of an animal devoured by carnivora may became fatal to rodents or a carcase near a marsh or rivulet may communicate parasites to the ruminants which drink the water; or to pigs." (Cobbold pp. 341) *Prime source* of *infection* in *the hog*. Langenback held that the earth worm was the original source of infection, Schacht claimed that the starting point was the beet root, Herbst believes it to be the mole. Virchow and Leuckart have shown the fallacy of the two former theories and question the accuracy of the last. The fact is the question must still be considered sub-judice.

Clinical History.—In considering this portion of the subject it will be convenient to adopt the usual divisions, as regards its course, into stages namely: 1st. Stage, or the period of gastro-intestinal irritation: 2nd. Stage, or the period of muscular irritation: 3rd. Stage, or the period of convalescence or death.

The severity of the symptoms in each of these stages depends on the number of larval trichina in the bearer and the general health of the patient; widely different must the symptoms be, when but a few thousand are engaged in their journey, from those produced by many millions. There may be no symptoms for which the physician would be consulted and yet the patient may be trichinized so that if, but a small portion of

his flesh be introduced into the stomach of another, severe disturbance and even death may result, the nature of this worm being such that it produces but one brood during its whole life, and this can take place only in the gastro-intestinal canal. It has been ascertained from numerous recorded cases that the symptoms of the first stage may be well marked, while those of the second stage claim but little attention; secondly, there is a class of cases in which the characteristic symptoms of the first stage are nearly absent and those of the second stage well marked; thirdly the symptoms appertaining to both stages may be proportionably present, and this class, it may be remarked, constitutes by far the greater number.

Stage of irritation of the gastro-intestinal canal.—Nausea; vomiting; anorexia; coated tongue; abdominal pains and derangement in the functions of the bowels characterize this stage. The vomiting is generally increased by the introduction of food into the stomach. Rarely is the anorexia complete. Sometimes there is constipation, if so it is obstinate and continues throughout the disease unless the case be about to terminate fatally, when diarrhœa invariably takes place, generally there is a loose state of the bowels, and tenesmus accompanies this condition; there may be but two or three liquid stools a day or the disease may simulate cholerine or take on the severity of asiatic cholera itself, but the stools do not resemble rice water. During this stage there may be a fetid breath eructations, gastralgia, insomnia, a tympanitic abdomen and febrile symptoms, Fuchs met with a case in which peritonitis occurred.

The symptoms of this stage generally begin about the 3rd day after the introduction, into the stomach, of the infected meat. Leuckart states that he has known severe symptoms to occur in forty two hours, and in other cases to be postponed for eight days. This period of incubation, as it were, is not definitely settled, as to the length of time which may elapse, being influenced by the age of the worm, the state of the cyst and the irritability of the mucous membrane.

Stage of muscular irritation.—Usually begins about the 7th day, but is subject to the same variations as the 1st stage. As the trichina enter the muscular tissue, pains simulating those of muscular rheumatism appear; they are generally first perceived in the abdomen and legs, are always increased by motion and by pressure and primary movements are more painful than subsequent ones; the same remark applies to pressure. When muscles performing special functions become affected, special symptoms are furnished, *i. e.* hoarseness and aphonia by those of the larynx, dypnœa by those of respiration, mastication, deglutition and retention of urine by their respective muscles becoming the seat of the worms which paralyze the muscles.

Usually about the 10th or 14th day various portions of the muscular system become swollen, contracted and indurated. Fuchs observes that these symptoms generally begin at the roots of the members and gradually reach their extremities. The sense which these swollen portions presents to the touch, has been compared by Leuckart to that produced by India rubber. The knees and elbows are usually the joints which are first involved in the contraction. The irritation produced by this numerous progeny on the delicate tissues causes febrile phenomena of a typhoid character; there may be rigors followed by heat; thermometer in the axilla shows a temperature of 100° to 105° Fah; there are dypnœa, quick respirations and a frequent pulse usually ranging from 90 to 135, it denotes augmented action, but not increased power of the ventricular systole; the urine is highly colored; furnishes sediments of uric acid, contains an excess of urea, sulphates and phosphates, it is also scanty and of high specific gravity, but according to Leuckart it never contains albumen; anorexia is complete in this stage; the tongue is usually thickly coated with a dirty fur with red tips and edges. Œdema always occurs in this stage of the disease, any part of the voluntary muscular tissue may be primarily affected, but the face seldom or never escapes, indeed the palpebral œdema if well marked is almost pathognomonic. Prof. Dalton maintains that the trichina reach their ultimate destination through the medium of the circulation, that the cysts are formed by the walls of the capillaries and that the œdema is produced by these obstructions to the flow of blood through the capillaries. This, it may be remarked, is the view taken by many of the American, and by some of the French, English and German pathologists and physiologists, but the majority of the English and continental writers, with Virchow and Leuckart at their head, maintain that the circulation has nothing to do with the dissemination of the worms, but it must be confessed that they have not as yet, given a plausible explanation of the cause of the œdema.

Sometimes characteristic symptoms are furnished by the eye *i. e.* pain in moving the ball; diminishing faculty of accommodation, mydriosis; photophobia and a watery state of the conjunctiva.

The irritation, produced by the superficial parts becoming affected stimulates the sudoriporous glands; in consequence of which perspiration more or less profuse is a frequent symptom; vesiculæ when present are most numerous on those parts of the body in which the perspiration is most profuse. It is rare for anasarca to occur in this stage. In adults the decubitus is dorsal, in children diagonal. Should a pregnant woman become infected with the worms, abortion invariably takes place.

Symptoms denoting an unfavorable course.—Paralysis of muscles

of special functions are bad omens, complications *i. e.* cerebral congestion; pleuritis and lobular pneumonia. A more asthenic type of the fever; involuntary emission of urine and fœces, feeble thready rapid pulse, respiration greatly increased, metiorism, delirium, carphologia, hiccough, hæmoptae, excessive prostration, death; the latter usually occurs during the fourth week, but may take place as early as the third week or be postponed until the sixth or even longer.

Modes of Death.—By coma, this is very rare; By apnœa, this is rare; By asthenia, this is common, the usual mode of death is by a combination of asthenia and apnœa.

Should the disease pursue a favorable termination *chronic trichiniasis* results. This stage begins after the encystment of the worm, generally between the 4th and 5th week. One of the first symptoms to declare convalescence is a copious increase in the quantity of the urine, and a return to its normal properties, coincident with or soon following the change in the characters of the urine, the febrile phenomena begin to subside, the muscular stiffness and pains disappear, sleep is restored, the profuse perspiration ceases; the appetite is very long in returning, muscular weakness remains for months: desquamation of cuticle and baldness of the head are occasional results. It is, especially, during this stage that anasarca, beginning at the ankles is met with; it is due to a hydraemic state of the blood. Should the hair fall off it is restored in from six to nine months, generally in greater abundance than before the attack. It may be remarked, that in the pre-encysted condition, the worm derives its nutriment from the tissue with which it is in direct contact but that it obtains its nourishment, when in the encysted condition, from the contents of the cyst, this is rendered probable by the facts that the cyst is at the outset filled with a substance semi-fluid or semi-solid and has been observed to diminish in size as it advances in age.

When trichinæ become encysted they are said to retain their vitality for an indefinite period. A case is related in Virchow's archives which furnishes some useful information relative to this subject. Prof. Middeldroff, in 1865, while dissecting out a secondary deposit of cancer in the axillary glands of a lady observed that the parts were thickly studded with white granules which by microscopical examination were found to contain LIVING trichina. The previous history of the case showed conclusively that she has been trichinized in the year 1842 twenty-three years previous to their discovery. Dr. Kolopsch remarks "that they really were deposited in 1842 is shown not only by the symptoms then present, but also by the fact of two of her servants having then died suffering from similar symptoms. It is an interesting speci-

lation how far there is any connexion between trichiniasis and cancerous degeneration." The suggestion that the patient had a subsequent attack of trichiniasis may be treated as a fanciful refinement.

(*To be continued.*)

THE ONTARIO MEDICAL ACT, AND THE MEDICAL SECTION OF THE CANADIAN INSTITUTE.

PROGRESS OF THE DISCUSSION.

To the Editor of the Canada Medical Journal, Montreal.

SIR.—The following preamble and resolutions formed the substance of the communication addressed by the Secretary of the Medical Section of the Canadian Institute, to the President of the Medical Council, during the last session of that body, held in Toronto, in the early part of April last. The resolutions were fully discussed at a large meeting of the Medical Section, and unanimously adopted :—

"Whereas, the Legislature of Ontario at its last session, did pass an Act respecting the Medical Profession of the Province, in which Act provisions are made to place upon a common ground with ourselves a class of practitioners known as Homœopaths, and an other class who style themselves Eclectics; and, whereas we, as members of a liberal profession, are unwilling to violate our clearly defined principles, by associating with any sect holding views and theories we consider to be absurd and false, therefore, be it resolved :—

That the Medical Section of the Canadian Institute does, in the most emphatic manner, protest against such unprecedented and uncalled for legislation.

Resolved : That this our protest be communicated to the Medical Council for Ontario, now in session, with the request that the Council take prompt and energetic steps to secure our release from associations so repugnant."

The communication led to a very animated and prolonged discussion by the Council, and was finally, on motion of Dr. Brouse, laid on the table. During the progress of the discussion, however, it appeared that the Medical Act, as a whole, had but few apologists, while many of the most influential members of the Council repudiated or condemned the measure in very energetic Saxon.

The Medical Section of the Canadian Institute has since held several meetings for the special purpose of discussing the Medical Act, and a Committee was appointed to prepare a deliverance on the question, with

a view to secure the united action of the profession throughout the Province. The committee reported the draft of a circular at a special meeting held on Tuesday evening, the 27th April. Although this circular was not adopted, it may not be out of place to give an extract or two from it, as it is believed to express the prevailing sentiments not only of the Medical Section but of the profession of Ontario. The circular states: "A law has been lately passed by the Legislature of this Province, which, whether intentionally or not, degraded us from the position we once occupied to that of associates of men whom we consider ignorant and every way unworthy of being connected with us. This law brings forward as fellow members with us of the College of Physicians and Surgeons of Ontario, men who know nothing of college walls, nor of the culture we have there with so much labor obtained. Our diplomas, even though conferred by the Universities of the old World, have thus lost their value, and our standing is levelled down to that of men ignorant of their own language and of every other; unacquainted with the natural sciences, even with those most closely connected with the healing art, ignorant of the history of disease and of Anatomy, and hence, unacquainted with Surgery, and Physiology, and Pathology, and for lack of this preliminary instruction unable to comprehend the most apparent facts in the progress of disease." "We have looked at the Medical Act as violating our rights, and degrading us from our fairly earned position. The *folly* of the scheme is as evident as its injustice. Can harmony and efficiency be expected in a council of which one portion denounces the fundamental principles of the other as a tissue of absurdity, and delusion? Is it to be supposed that men, having no confidence in each other's intelligence and integrity, can wisely and truly discuss and decide the grave questions that must come before them? Serious differences will arise even among those best qualified to examine such questions. What may fairly be anticipated when steam doctors and Homœopathists are called upon to decide respecting the establishment of a chair of Pathological Anatomy, for example, in our Medical Schools!"

"An attempt will doubtless be made to convince you that this is the bill asked for by the Committee of the Council. So far is this from being true that the provisions to which we object, and against which we most earnestly protest, were introduced into the Act after the bill was supposed to have received its permanent character. To establish this fact we have the declarations of at least four members of the Council, and these declarations not denied by the Committee, in whose presence they were made. The truth is that these clauses of the Act were introduced by the President of the Homœopathic board and forced upon the Committee

of the Council by the assurance that if these modifications were not accepted, the bill would be thrown out. Yielding to this pressure the Committee of the Council apparently forgetting their duty to maintain and defend the honor and rights of their constituents, accepted the bill thus modified, and consented to associate with these ignorant pretenders to medical knowledge."

The circular, however, portions of which are quoted, was not adopted by the Medical section, as many of the members thought the object we had in view would be attained as well by giving publicity through the press to our first resolutions. The following resolution was thereupon substituted for the circular. Moved by Dr. Agnew seconded by Dr. Hall, and "Resolved: That the Medical Section of the Canadian Institute having already protested against the Medical Act, so far as relates to the coerced union with Homœopaths and Eclectics in a Medical Council for the Province, further, respectfully recommend our brethren throughout the Electoral Divisions who hold similar views with ourselves, to pledge their Candidates for election to the Council to use every constitutional means to secure the repeal of those objectionable clauses." Carried.

While this question was before the Section, a large number of letters from practitioners in different parts of the country were received by the Secretary and other members, cordially endorsing our action. A quotation or two from these may not be out of place. A correspondent from Hamilton says, "I may state that the Physicians of this city (Hamilton) so far as I know their views, condemn the Homœopathic clauses of the Medical Act." "For my own part I have nothing but condemnation for the acts of the Medical Council from first to last, and I think the more they are examined the greater evidence will be obtained against the present Act,—for the representatives of the profession showed how little able they were to discharge the duties they undertook." "I am quite sure the Council's proceedings are not approved by any one who takes the trouble to examine them."

Dr. Ely, Secretary of the County of Perth Medical Association writes: "You have our heartfelt sympathy in regard to your action concerning that hybrid, the Medical Bill. We feel it necessary, in this county, to take united steps to defend our rights against the encroachments of quackery."

A correspondent from Oshawa, County of Ontario, writes:—"I am confident that those clauses in the Bill relating to Eclectics and Homœopaths will be universally condemned, and your protest undissentingly sustained. I know, so far as I can, I will use every means and exert

every influence, directly and indirectly, which will tend to rally opposition to such an obnoxious and infamous production. I look upon it as an abortion and *illegimate* at that. For Dr. McGill to say that the profession knew that such a bill was to be passed, or *even* presented, is simply nonsense, 'monstrous nonsense.' The profession was aware, as I understood it, that a committee was appointed at the meeting of Medical Council, in Guelph, twelve months ago, to draft amendments to the old bill, but it had no idea that that committee could find one so presumptuous as to bring any amendments, or bill before the Legislature without being first submitted to the profession; besides I do not know that there is any evidence to show that the draft of that committee was even submitted to the Council afterwards as a whole. The first intimation I had of any attempt being made to change the medical law, was through the daily papers, *after* the bill had received its first reading, and not until some time after that, had I the privilege oi perusing it. Its features then were, in my opinion, frivolous and meddlesome; as it stands now humiliating and disgraceful."

Letters from Dr. B. Workman and others were received to the same effect, but your space has been, already, I fear, encroached upon too much. To show, however, that the action of the Medical Section, not only roused the Profession of Ontario to action, but received the favorable notice of a portion of the Press, I enclose an article which appeared in the *Leader* newspaper of this city.

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"As we understood it, the Medical Council, about to be created by the new bill, will be composed of three different schools in medicine—three standards of faith diametrically opposed to each other. If these three classes, or sects, hold their opinions honestly, it will be impossible, there should be any compromise between them, and, hence, unity of action, or anything else than discord of an apalling kind need hardly be looked for by the Profession. As a member of the Medical Section of the Canadian Institute well observed, it is as wrong in principle, if not in degree, to attempt to co-erce the different "Schools" in Medicine into a distasteful union, as it would be for the Legislature to attempt to compel religious bodies, differing from each other, to meet in Synod together for united Ecclesiastical legislation. And then, if our correspondent—not without reason—has to complain that the defunct Medical Council conducted its meetings with a plentiful lack of dignity, and so failed to command the respect of either the profession or the public, on what fabric can we base a hope that the discordant elements of which the new Council will be composed shall be in any respect an improvement on the

old? Nay, may we not, without claiming remarkable prescience, certainly predict that, the war of the schools will rage at the Council board, with the edifying result of giving the world a miniature sample of the style in which discussions may be suffered to be carried on in the belligerent regions of Pandemonium."

"For the good of the Profession at large, as well as in the public interest, we regret this forced union of "Schools," and we hope that the selfish aims ascribed to some of the "Manifestors" of the measure, may not be allowed to carry the day, and that the next session of the Legisture will expunge this coercive and improper measure, and give a new and satisfactory charter to the good knights of the Scalpel.—But, why cannot the self constituted allopathic legislators see that their efforts must always be attended with unsatisfactory results both to the public and to themselves, so long as they direct their main efforts to the destruction of the Homœopaths and Eclectics? Are they really so blind as to fail to see that the weaker body, albeit often unworthy of it, will always have most sympathizers, when assailed by the stronger? We are aware that the trap into which many otherwise astute medical men have fallen, is that, the operation of the new act will strangle Homœopathy. Let us examine this position. We find, in the first place, that all medical men, including Homœopaths and Eclectics, are entitled to the same legal privilege. Their names will be enrolled on the same register, and they will become members of the same College of Physicians and Surgeons. While this is the case, a bait is held out to catch student-recruits, in the shorter curriculum of studies, than that required by the Allopathic body. Now, to our mind, these provisions give a very decided advantage to Homœopaths, who instead of being "strangled," as our allopathic brethren charitably hope, have the game very much in their own hands, and we mistake their mettle, if this be not soon made to appear. Let us look at the matter more closely. The Allopaths have all along professed to despise the other sects as ignorant and dishonest; they are now compelled by the levelling up process, to admit them to terms of perfect equality. They appear on the same register; they are members of the same College; they are entitled to be met by Allopaths in consultation. Should Allopaths refuse, the public would sympathise with the *theories* of the new school, against the *prejudices* of the old. They are entitled to admission to the same Societies and Associations as the Allopaths. Should they be excluded, public sympathy would be promptly at their side as the weak and persecuted. Should they be admitted, they will doubtless endeavor to hold up and hold forth the beauties of "*Similia Similibus Curantur*," and, refusal to discuss their dogmas, by the Allopaths, would be con-

strued as an indication of fear for the result; while, to accept the challenge on every occasion, would make medical societies bear gardens, alike demoralizing to the Profession, and unedifying to the public. From every point of view we contend that the diplomacy of the Homœopaths has shown itself superior to that of their self-lawded opponents, in the "Manipulation" of the Medical Act during its passage through the House.

"If the Allopathic body, numbering as they do, the vast majority of the medical men of the Province, and possessing the only educational institutions, would work harmonioulsy with one another and strive honestly for the elevation of their own status, trusting to the march of intelligence and learning for the extinction of quackery, where such exist, rather than Parliamentary enactment and intrigue, public sympathy and approval would far more certainly be accorded to them, and the end they profess to have in view would far more certainly be realized. In the meantime the game of depreciating their own schools, and depreciating one another, can only lead to a lowering of their *prestige*, and the destruction of their influence as a liberally educated body of men."

"Our correspondent is, perhaps, rather sensitive, in regard to the way in which certain members of the late Council spoke of the Medical Section of the Canadian Institute. The fact that the communication from the Medical Section,—though, perhaps, not worded as judiciously as it might have been—created such a commotion, and led to such a long, as well as stormy wrangle or debate, is sufficient proof that the Council had more regard for the Toronto Medical Society, than they were willing, in so many words to admit. The Medical Section has sounded a key note, in regard to the new act, and we mistake much, if it will not be promptly taken up, and echoed and re-echoed by the profession of Ontario."

Holding a sort of official position, as Secretary of the Medical Section I was advised that it would not be uninteresting to your general readers. Mr. Editor, to get a *resumé* of the discussion, on the Ontario Medical Act, so far. And, as the character of the profession in Ontario, seems, for the time being, to be jeopardized by the recent indiscret Medical Act. it is not perhaps, altogether unbecoming, to seek, through the medium of such a journal as yours, to vindicate our consistency and adhesion to principle before the world.

I have the honour to be, Sir, your obdt. servt.,

J. N. AGNEW,

Secretary Medical Section Canadian Institute.

TORONTO, May 20, 1869.

REVIEWS AND NOTICES OF BOOKS.

A History of the Medical Department of the University of Pennsylvania from its foundation in 1765 *with sketches of the lives of deceased professors.* By JOSEPH CARSON, M.D., Philadelphia, Lindsay and Blakiston 1869. Montreal, Dawson Brothers.

To all the *alumni* of Pennsylvania University, this Volume will possess peculiar interest, giving in a comparatively moderate compass, the history of their *alma mater.* To the profession at large, however, it possesses considerable interest, from the fact that several of the introductory chapters are devoted to a detailed account of the first Medical teaching ever attempted on the American continent. After reading Chapter 2 we could not help contrasting the position of a Medical teacher to day with his hundreds of pupils, and that occupied by them over a hundred and ten years ago. It is a very readable book, the style being pleasant, and its perusal serves to pass an agreeable hour or two.

PERISCOPIC DEPARTMENT.

Surgery.

SECTION OF ANTERIOR TIBIAL NERVE FOR NEURALGIA.

The first section of this nerve recorded, so far as we are aware, was made on New Years day of the present year, by Dr. James E. Garretson, of Philadelphia, under the following circumstances.

The patient, Samuel Banning, of Kingsessing, a soldier in the war of the rebellion, received three wounds, one in the shoulder, one through the calf of the right leg, the third through the right foot, involving the metatarsal bones; this last requiring thirteen months in hospital for its cure

About two years back, pain more or less severe was found to be associating itself with a sense of exhaustion, which over-exercise always produced in the foot; this pain gradually increased until finally it passed up to the knee-joint and there settled about the head of the tibia, and on the outer aspect of the limbs on the line of the peroneal nerve. When first seen by Dr. Garretson, the patient had been confined to his room for eight months, being fully two-thirds of this time in a state of dementia, requiring constant attendance to prevent the commission of suicide, which he would attempt in any manner within his command if left for

a single hour unguarded. The tenderness about the head of the tibia was so excessive that the most limited handling would throw him almost immediately into spasms; there was little or no tenderness about the foot or lower third of the leg, and no special point o pain at any place.

In the case, six weeks were spent in deciding the diagnosis, which finally being determined to be a lesion of the anterior tibial nerve produced by some sequences secondary to the wound of the foot, Dr. G., with the assistance of Dr. Hooper, of Kingsessing, on New Year's day, operated by cutting down on the vessels one and one-half inches above the annular ligament, separating the nerve from the artery, and removing one inch from its continuity.

Result.—The operation was performed at 11 A. M.; at 11½ the patient fell into a sound sleep, which continued until 5 P. M., the first sleep of over half an hour duration which he had enjoyed for a period of six weeks; from this sleep he awoke refreshed, without pain, and in every respect, mentally, quite himself. The wound which had been approximated, to unite by the first intention healed thoroughly throughout, looking in every respect well for a period of one week, at the end of which time it opened and assumed an erysipelatous appearance, several blebs appearing in its immediate neighborhood; these however yielded at once to an application of iron and quinine locally, and to gentle unstimulating poulticing; the wound, however, continued slightly to suppurate, being fully six weeks in healing.

The toes, which, at first, were almost, though not quite, deprived of motion, gradually, after the first few days, recovered themselves, and now seem none the worse for the operation.

The principal discomfort complained of after the section was in the ankle-joint, this having a constant sore feel, and being weak and unreliable; a series of very small cutaneous abscesses, of little moment, however, exhibiting the abstraction of the wonted nerve supply.

Of the original pain the patient, however, never had one twinge after the section, the tenderness about the knee-joint disappeared in three days; the man at this date, three months after the operation, is attending to his business as usual, the only complaint being that the foot operated on, tires before its fellow.

A second case of quite as much interest is also reported by Dr. Garretson, of section of the incisive branches of the superior maxillary nerve, where they pass down the wall of the antrum. In this case the patient, a lady, wife of an undertaker, had been suffering periodic attacks of pain about the head and face. This patient, exceedingly quiet and retiring, spent most of her life in sunless rooms surrounded by the melan-

choly paraphernalia pertaining to her husband's business; she was anemic and of poor health and spirits. Although this patient had certain bad teeth, yet the pain had never seemed associated with them; indeed, so insensible where these organs to ordinary agents of irritation, that a diagnosis had been founded alone on her general condition and surroundings, and remedies applied entirely in such direction. Tonics were administered, exercise and amusements conjoined with generous living were advised, but with even this entire change the patient grew constantly worse. The diagnosis discovered to be thus at fault, the teeth were extracted, still the condition persisted and the pain increased. She was now kept under treatment over a year, the pharmacopœia being literally exhausted. "At this period, in consultation, I made a most thorough examination of her system. The pain had assumed and continued the impression of an iron clamp around the head terminating at the chin below, and which clamp seemed daily contracting itself; the terror and pain of this impression had become so great as to convert the patient almost into a lunatic. First, was there any remaining tooth or roots of teeth implicated? I examined for dental caries, for pulpitis, for nodules, for necrosis, for supernumerary teeth, for exposed cementum, but fully assured myself that the dental organs were not at fault. I examined the spinal cord, and through its expressions the encephaloid mass. Organically, the trouble was not reflex from these points; finally I returned to the old cavity; the teeth, which had been extracted the year before were the molars and premolars of the left superior jaw; might there not possibly have been left just the smallest particles of one of these roots? I was making pressure over the canine fossa when the patient made slight complaint; it was the only point which had yielded difference in sensation; it was not pain of which complaint was made—not discomfort, it was simply a difference of sensation. What was the meaning of this? differentially, it was just to infer that here existed something, the lesion perhaps of which we were in search. Acting on this only hint, I obtained the consent of the physician in attendance to make an exploratory trephine into the antrum, and on performing the operation, discovered within the cavity that branches running from the intra orbital nerve across it had enlarged to the size of an ordinary knitting needle; these enlarged nerves, of which they were two, I cut away; the patient was immediately relieved, and although a year has passed, she has had no return of the neuralgia, at least so far as I am aware, and I have since met her upon the streets, looking rosy and fresh."—*Philadelphia Medical and Surgical Reporter.*

FINAL HISTORY OF A CASE OF SEVERE INJURY OF THE BRAIN.

This case was originally reported in the *American Journal of the Medical Sciences*, for July, 1850. The accident happened in Vermont, in September, 1848. The patient, a man 25 years of age, had a pointed iron bar, used for a "tamping-iron," three feet and a half in length, and one inch and a quarter in diameter, driven through his head by the premature blasting of a rock. The bar entered the left side of the face, just in front of the angle of the jaw and passed obliquely upward, inside the zygomatic arch, and through the anterior part of the cranial cavity, emerging from the top of the frontal bone on the median line, just in front of the point of union of the coronal and sagittal sutures. The patient was at first stunned, but soon recovered himself so far as to be able to converse intelligibly, rode home in a common cart, and with a little assistance walked upstairs to his room. He became delirious within two days after the accident, and subsequently remained partly delirious and partly comatose for about three weeks. He then began to improve, and, at the end of rather more than two months from the date of the injury, was able to walk about. At the end of sixteen months he was in perfect health, with the wounds healed, and with the mental and bodily functions unimpaired, except that sight was permanently lost in the eye of the injured side.

It now appears that he subsequently removed from Vermont, and, after living in several different places, went to San Francisco in 1859. In 1861, he was attacked with epilepsy, and died in May of the same year, twelve years and a half after the receipt of the injury. His skull was recently procured, and presented to the Warren Museum of Harvard College.—*New York Medical Journal.*

THE EXAMINATION OF THE BLADDER.

By J. Matthews Duncan, M.D.

Although the diseases of the bladder have been the subject of much observation and study, and much has been written concerning them, I am not aware that in any quarter the physical examination of the bladder is described with the care and fulness which it appears to me to deserve. I am satisfied that attention only requires to be called to it to secure for it the consideration it merits, forming, as it does, a valuable addition to our means of diagnosis, that may be available in many difficult cases.

No special instrument is required for the purpose. A rigid female catheter is scarcely long enough, but may suffice, especially if it is well

closed by its stilet I use a metallic vesical sound, that has, about one inch from its extremity, a curve which joins the two parts separated by it at an obtuse angle. The instrument must be rigid, so as to be pushed with a little force without yielding. Its point should be rounded and blunt, so that it may not easily injure the walls of the bladder, or cause pain in a healthy organ. It is convenient to give it a flat, button-like handle, and a total length of about twelve inches.

The conditions which this instrument, used by the fingers of a skilled practitioner, should discover or investigate are the following:

1. The tenderness of the bladder.
2. The length of the bladder.
3. The state of the walls in respect of softness or distensibility.

Each of these subjects will require some separate consideration. When the whole are correctly made out in any case, the results, cannot fail to be of practical value to the practitioner who knows how to make use of them.

The operation of conducting this investigation must always be made with tenderness and care, and, in a case where much pain is anticipated, only after a decision, duly arrived at, and founded on a just appreciation of the features of the case, that the investigation will probably yield results justifying the infliction of the pain and alarm usually excited.

1. *The Tenderness of the Bladder*

This tenderness must be, if necessary, distinguished from tenderness arising from pressure by the instrument on the neighboring inflamed parts. It is seldom difficult to do so; for, first of all, such inflamed parts can be previously and otherwise made out, and their position avoided in manipulating the instrument, or their presence allowed for; but, secondly, it is found in practice that even the compression of the bladder by neighboring inflamed masses does not prevent the careful examiner from investigating the state of the bladder without interferences from such sources of error. This last statement is often remarkably verified by the absence of vesical tenderness under such circumstances.

In cases of gonorrhœa, or in any others in which there is urethritis or urethral tenderness, a greater difficulty is introduced by this complication than by the former. For the pain of passing the instrument is great; if present, it anticipates the eliciting of vesical tenderness, and accompanies it when elicited: it causes expressions of pain even when vesical tenderness is absent, and the patient is generally too intent on her feelings to submit to questionings regarding any difference in locality of the urethral and of the vesical pains. But this difficulty is to a great extent

overcome by remarking the great increase of pain produced in touching the vesical walls in such cases as those of gonorrhœal cystitis.

Catarrh, or irritability and inflammation of the bladder, are the conditions in which tenderness is always great, sometimes intense; every touch of its walls, every motion of the instrument, causing a cry of agony. This is what is naturally expected; and it is, I believe, invariably found. But it is not a rare occurrence to discover total, or nearly total, absence of tenderness in cases where catarrh or inflammation was believed to be present. In such instances, nothing can be much more important than to find the absence of tenderness. The diagnosis is corrected. The practitioner points his inquiries in a new direction, finds out the hidden seat of disease, or at least has a more accurate idea of the nature of the case under his care.

Cases illustrating this statement have frequently occurred in my practice.

It is only necessary to name the difficulty, often occurring in urinary cases, of deciding between the kidney and the bladder as the source of the symptoms, to show the valuable aid that may be acquired by ascertaining the state of the bladder as to tenderness and other conditions.

The healthy and many diseased bladders can be examined by the sound fully without any complaint of suffering being made, far less any cry of pain. It is needless to say that many women, easily frightened, can scarcely believe that they are not suffering when under the examination, and disquiet themselves greatly. On the other hand, I can say that I have often examined the bladder in women without their being aware that any thing had been done. I have been asked when I intended to begin, when the examination was already completed.

I have examined a bladder which had no notable sensitiveness, which was believed to be only compressed and slightly irritated by neighboring disease, but which was really the subject of cancer, having several large and bleeding projections in its interior. These were indistinctly felt; but the absence of pain on examination misled me as to the condition of this bladder. At that time I did not know that a bladder so extensively diseased and disorganized could be examined by the sound with so little suffering.

2. *The Length of the Bladder.*

By the length of the bladder, I mean the length of the sound which passes into it. I measure the length from the external orifice of the meatus urinarius; and, in giving measurements, I understand the point of the instrument applied to the top of bladder to be one extremity of the measured line, and the external orifice of the meatus urinarius to be

the other limit. Of course, for anatomical exactness' sake, the length of the urethra should in every case be subtracted from the measurement. But, as in no case can the length of the passage be ascertained, I do not attempt to subtract it, and therefore give the whole length of bladder and urethra.

This length, besides its own immediate value, which I shall attempt to display, is also of use as contributing to an estimate of the capacity of the organ, a quality which it is very difficult justly to appreciate—for it is very erroneous to suppose that the quantity evacuated, when the bladder is said to be full, gives, in every case, a reliable measurement of the capacity of the organ. The quantity evacuated from a healthy bladder varies under a variety of circumstances, especially the condition of the retentive power of the abdomen. It is generally, like the air expelled in an expiration, only a certain overflow produced by vesical contraction and the bearing-down effort, and may be a greater or less amount, according to the intensity of these actions. Sometimes, even while there is a vesico-vaginal fistula of no small dimensions, and a relaxed vagina, a large quantity of water accumulates in the bladder. After delivery, it not rarely happens that, in a case of retention, the urine ceases to flow through the catheter when the recently-distended bladder is not half-emptied. At such a time, the cessation from the bearing-down which has half-emptied the bladder may lead to air regurgitating through the catheter into the bladder. The further emptying of the bladder, in such a case, is effected by continued powerful straining, or pressure by the hand on the brim of the pelvis substituted for it. It is not my purpose to discuss fully the measurement of the capacity of the bladder. I have said enough to show that the amount evacuated is not, in general, a reliable indication of capacity. I believe that, in cases of irritation and inflammation, it is more to be depended on than in health; but, in all cases, the length of the bladder will afford important aid in estimating the bulk of contents.

When a woman passes a large quantity of water at once, she must have a capacious bladder; but when a woman only and always passes a small quantity, that circumstance is in itself not sufficient to prove that her bladder is of contracted dimensions.

When, from so-called paralysis of the bladder, the urine is retained, the bladder assumes enormous dimensions. In such circumstances it is well known that, besides involuntary dribbling, the urine is in many cases passed at regular intervals, as in health, but in small and insufficient quantity. The circumstance of the bladder being habitually and naturally only partially emptied, which I now point out, occurs in cases both of

health and disease. Partial emptying is itself no sign of disease, nor a sign of exaggerated capacity.

It is, then, necessary to keep in mind that it often happens that a woman is frequently micturating, and yet never nearly emptying the bladder. It is this circumstance that, in certain cases, especially those where the urine is decomposing in the bladder, gives great value to the operation of washing out the bladder; and the opposite condition of very complete evacuation sometimes renders the operation of washing unnecessary, and, it may be, injurious.

The healthy bladder cannot be measured as the uterus is, or as the hard, diseased bladder may be—for the sound on reaching the summit of the cavity meets, in a healthy organ, with a soft wall, which can be pushed away before its point, sometimes to the extent of an inch; but a healthy bladder, gently pressed by the sound, measures from five to six inches. The measurement cannot be more precisely given, on account of the distensibility just mentioned.

In cases of disease, the bladder is often found very greatly exceeding this length, as in retention. A young girl, not yet arrived at the age of puberty, had all her life wetted her bed involuntarily. At no time had she the natural feeling of desire to make water, and it was only by emptying of the bladder by straining that she avoided wetting herself in the daytime. Whether the theory of the case be right or not, the treatment founded on it was successful. The dimensions of the bladder were diminished, and its natural sensibility restored.

In ordinary cases of catarrh or inflammation of the bladder, examples are found of diminished length of the bladder, and a very common dimension is four inches. A case having a less measurement is surely a grave one on that account, and *vice versa*; a case having a measurement above four inches is, so far, a favorable one, inasmuch as cure will be more easily and more rapidly attained.

In cases of severe acute cystitis, the capacity of the bladder is sometimes entirely destroyed. There is naught but a potential cavity, or only one capable of containing a few drops of urine, which are soon expelled with acute pain. The sound cannot be passed further than the urethra, that is, about an inch. If, while the patient is under the influence of an anæsthetic, a moment of vesical relaxation is waited for, the sound will pass to the top of the bladder, entering little more than two inches.

In some cases of urinary calculus, the bladder has no capacity for urine, or only the very smallest, the stone filling completely the irritated organ.

In cases of inveterate chronic cystitis of the worst kind, I have found the bladder to measure little above two inches.

Besides indicating the actual state of the bladder at any given time, measurements at successive periods, showing increase or decrease of dimensions, are valuable and very reliable indications of gradual aggravation or amelioration of the cases. And this indication I have frequently availed myself of in practice, with great satisfaction.

3. *The state of the Walls in respect of softness or Distensibility*

Examination by the sound informs the surgeon as to the shape of the bladder. It sometimes also gives information regarding the condition of the walls as to smoothness, or roughness, regularity or irregularity of surface. A bladder, the subject of malignant disease, may present nodosities on its surface, which may be more or less distinctly felt by the examiner. A bladder, the subject of chronic cystitis, may present an irregular surface, from the projections of bands of muscular fibres lying in various directions.

But a more generally discoverable quality of the walls of the bladder is their condition as to distensibility. The inflamed bladder soon becomes not only small but also hard or indistensible, and this condition can be appreciated by the sound. It is well marked in all cases of contracted bladder. It is remarkably absent in a healthy organ.—*Edinburgh Medical Journal.*

Medicine.

THE VALUE OF MEDICINE.

Sir Thomas Watson, in retiring from the presidency of the Clinical Society of London, gave a very appropriate as well as very brief address, from which we extract the following sensible remarks:

It seems to have been thought, in some quarters, that I had renounced my faith in physic—that I undervalued the resources and the usefulness of our art. Such a motion is the very reverse of the truth. I am anxious to have the effects of remedies carefully ascertained and certified, just because I have so great faith in their real force. What I deprecate, what I would fain see altered, what it is one great end of this Society to do away with, is the vagueness of aim, the uncertainty of result, the merely tentative nature of too many of our prescriptions. Far from thinking that our warfare with disease is a vain warfare, I am only desirous that our arms should have the precision of the modern rifle, instead of the wild flight of the old-fashioned smooth-bore. Probably I

have even greater reliance than many physicians upon the virtues of drugs—of what used to be called simples—a word I like, because it helps continually to suggest to one's mind the golden rule, that their administration should be simple; that they should be mixed as little as possible with other substances which might confuse and vitiate the conclusions to be drawn from their actual operation. I am one of those who hold to the doctrine—always within its proper limitations, the limitations assigned by Bacon—the doctrine of final causes, so despised by modern philosophy. I believe that those subtle essences which human research and ingenuity have succeeded in deriving from various substances in nature, and which, when applied to the human body, sometimes even in very minute quantities, have a potency so marvellous as to abolish pain, to compel sleep, to extinguish fevers, to stop for long, perhaps for ever, the recurrence of paroxysms of epilepsy which had continued to recur for years, were implanted in those subtances by the Creator, among other uses, it may be, for these very services to mankind, and that there lie concealed in other substances, and especially in the vegetable kingdom, many analogous healing powers, which it is a part of man's mission and privilege, and will be his great reward, to search after and to discover.—*Medical Times and Gazette.*

ATROPIA AS AN ANTIDOTE TO PRUSSIC ACID

In the *Practitioner* for August, 1868, is an article by M. W. PREYER, on the toxicological action of prussic acid. His experiments lead him to the conclusion that in comparatively *moderate*, though fatally poisonous doses, prussic acid acts by suddenly and completely depriving the blood of its oxygen. Obviously, then, the first object is to resaturate the blood with oxygen as quickly as possible. In *very large* doses, prussic acid paralyzes the heart, and is obsolutely fatal. These observations led M. Preyer to believe that the true physiological antidote for prussic acid was an agent which (without producing any other important poisonous effects) would paralyze the peripheral branches of the vagus in the lungs and in the heart; and, on the other hand, stimulate the central nervous apparatus of respiration in such a manner as to produce rapid respirations. He now makes the very important announcement, that sulphate of atropia acts precisely in this way, and he has demonstrated on rabbits and guinea-pigs, that the subcutaneous injection of a *very small* dose of this agent, if performed quickly after the injection of the prussic acid, is an *unfailing antidote.*—*Half-yearly Compendium of Medical Science.*

SULPHITE OF SODA IN CHRONIC CYSTITIS.

Mr. L. Wilcox, late house surgeon of King's College Hospital, recommends the use of sulphites in those cases of chronic cystitis where the urine decomposes before it is eliminated. He finds that by the employment of sulphite of soda all the putridity disappears, and the urine becomes clear and colourless.—*The Practitioner.*

Midwifery and Diseases of Women and Children.

SULPHURET OF POTASH IN WHOOPING COUGH.

Dr. Mackelcan, Hamilton, Ont., was led, from a notice of it which he saw in a French Medical Journal forty years ago, to try this remedy. and his success with it has since been such that he has used no other. He administers it in a mixture of one part of syrup to three of *distilled or rain water*, "the dose being one grain for each year up to four years of age, and after that a half a grain additional for each year; the smaller doses being administered in a teaspoonful of fluid, and the larger more diluted, in proportion of the quantity of the salt in each dose."

"Its beneficial effects are not perceived for five days, when the intervals between the paroxysms of cough become longer, and after that their violence diminishes from day to day, until at the end of ten or fourteen days it is seldom necessary to pursue the treatment further.

"As the drug easily spoils by keeping, it is important to have it fresh. If it dissolves perfectly in the syrup and water, and the mixture is of a greenish colour, it may be relied on; but if there is any sediment, it has been decomposed by exposure to air, and becomes a sulphate."—*New York Medical Journal.*

THE USE OF CHLORATE OF POTASH AS A PREVENTIVE IN ABORTION.

At a late meeting of the Medical Society of the County of New-York, Dr. Fordyce Barker strongly recommended the chlorate of potash as a preventive of abortion resulting from fatty placenta. This remedy was first suggested by Dr. James Y. Simpson, on the ground that its oxygen-producing power would render it beneficial in this class of cases. Whatever may be the truth of this chemical theory, clinical experience has convinced Dr. Barker of the value of this remedy. He related several remarkable cases of success with it after repeated abortions. Patients themselves frequently notice the effects of the remedy on the movements of the fœtus.

As a cause of abortion he considers plethora, and nervous irritability as being rather secondary than primary manifestations, and has little

faith in preventive remedies directed against them. To toxœmia and chloro anæmia he attaches more importance, and very generally directs exercise in the open air, with good diet, mild stimulants, and tonics where necessary. These, he says, with the confidence of hope, will often bring a pregnancy to a happy termination after repeated abortions.—*Exchange.*

THE TREATMENT OF CROUP

The *Wiener Medizinische Wochenschrift* is publishing an extended series of articles entitled "Croup, Diphtheritis, Pseudo-croup, and allied affections of the Pharynx and Larynx, after the Clinical Lectures of Professor OPPOLZER, of Vienna." Croup and diphtheria are treated as two entirely distinct diseases by Professor Oppolzer, and croup is regarded as a local disease. From one of the numbers, viz., of October 3d, 1868, p. 1289, we make the following extract embodying his treatment of croup. In the beginning, cold compresses are applied to the throat, which are covered by a dry cloth or oiled silk, and changed only every three hours. A tablespoonful of the solution of three grains of tartar emetic, in two ounces of water, is given every fifteen minutes, until repeated vomiting follows. Generally tough mucus and ring-shaped membrane are expectorated, with relief to the child. After the emetic, one of the following powders is given every hour:

℞. Hyd. chlor. mit.,
Pot. iodidi, a a . . . . . gr duodecim.
Sacch. alb., ... oz. unam.
M. exactissime f. p. div. in dos. æquas duodecim

After the first powders the children usually continue to throw up pseudo-membrane. Then the vomiting ceases, and the condition improves gradually. When the croupy paroxysms and dyspnœa return, which in most cases occurs, the emetic is repeated. In cases of difficult expectoration of the membrane, the vapor of hot water is caused to be inhaled, with or without the nebulizer, and the powders continued. If this treatment is unsuccessful, and the paroxysm and apnœa are about to return for the third time, tracheotomy is to be performed without further delay.

Prophylactically, Professor Oppolzer is against keeping children who have once had croup constantly housed up, and spoiling them by too warm clothing; but advises care in observing the wind, and to protect them from the rain, north or northeast winds. Such children should not be outside of the house after sunset. He also recommends cold washings of the throat and chest, with the precaution to dry the skin carefully thereafter, and to prevent the children from exposure to raw temperatures soon after such washings.

Canada Medical Journal.

MONTREAL, MAY, 1869.

THE "MEDICAL COUNCIL OF ONTARIO" AND THE "CANADIAN INSTITUTE," OF TORONTO.

In our last issue we gave an account of the proceedings of the Medical Council of Ontario at its last and final meeting; at the time we refrained making any comments believing that our observations would be more appropriate in the present number of the journal. It will be remembered by our readers that a communication was received by the Council from the Canadian Institute, the oldest scientific body in Ontario, which numbers among its members the leading scientific and literary men of the country. We publish elsewhere a letter from Dr. Agnew, the Secretary of the Medical Section of the Canadian Institute, which will well repay perusal.

We were not at all surprised at the manner in which that communication from the Institute was treated by the members of the Medical Council. The proceedings of the Council as reported in our last number were throughout undignified; this is the very mildest expression which can be applied, if we said that they savoured rather of low billingsgate, it would be nearer the truth; and these are the representatives of the Medical profession in Ontario. Surely our brethren in the West should weed their Medical Council of some at least of the present members. The late Council was the most anomalous lot it was ever our chance to read about; their President in his address very properly alluded to their great mission, that of raising the standard of the profession so that it might "occupy a place of power, of pride and of distinction in the Dominion," and the words were hardly past his lips, the joyful sound of the cheers which greeted him had hardly died away in the distance, ere one of the Council, Dr. Clarke of Guelph, arose and suggested the propriety of receiving to their bosoms several Homœopathists who were outside the bar, that they might take "their place along with the members of Council." We presume the suggestion of Dr. Clarke was adopted, as a Dr. Campbell immediately thereafter addressed the meeting as representing the Homœopaths. But to be serious this report would, if relieved of its slang, far better grace the pages of *Punch*, *Diogenes*, or some comic sheet, than

those of a sober minded medical periodical; we felt at first inclined to cut it out, but in acting thus we would have done an injustice to many of our readers. Referring again to the communication submitted by the Canadian Institute we were not surprised that the Council should have refused to dicuss its principles, when we consider the hearty vote of thanks passed by the Council to their Committee, who had the management of working the bill through the House.. Their were not wanting members of the Council, who manfully stood out against this Bill and its objectionable clauses; others again, and we regret to say the large majority of that body, supported and lauded the provisions of the Bill, and some even went so far as to eulogise the sapient promoters as public benefactors. All who opposed their views were either foolish, or contemptible, or impertinent, or gave utterance to "nonsense, monstrous nonsense." The Canadian Institute was characterised as an insignificant society; they were taunted with making a little God of their President, and the Delegates from the Institute were informed in child like language by one member that the Council did not care about him. These are the men many of whom again seek the support of the members of the profession; they again ask for re-election from that body of gentlemen whom they have degraded and outraged. We hope the Profession will in time wake up to a sense of its own dignity, and by unmistakable and united action prove to those individuals that they are not safe custodians of the honour and welfare of the Medical Profession of Ontario.

If our brethren in Ontario wish to retain the respect of the profession in other localities, they must in the most decided manner separate themselves from all connection with Homœopathy and the other imposture Eclecticism. It remains to be seen what action the "Canadian Medical Association" will take in reference to this Act. The introduction of this measure was hasty and illjudged and it is to be regretted that the Medical Council of Ontario did not wait for the action of our national Association on the subject of medical reform. Meanwhile we cannot but regard the position of the whole profession in Ontario as humiliating in the extreme; nor do we envy the individuals who were instrumental in procuring the passage of the Ontario Act, which is equally a disgrace to themselves and to the Statute Book. We give the communication from the Secretary of the Canadian Institute, in another portion of the Journal.

CANADIAN INSTITUTE, TORONTO—MEDICAL SECTION.

A meeting of this Society was held on Wednesday night, April 7th, for the purpose of considering the new Medical Bill in regard to its effects on the state of the profession. On motion Dr. Thorburn was called to the

chair, in the absence of Dr. Hodder, who was unavoidably detained. The chairman called upon Dr. Agnew, the secretary, to read the report of the committee appointed at the last ordinary meeting of the section, for the purpose of preparing a resolution on the Medical Bill. The committee reported the following preamble and resolutions:—Whereas, the Legislature of Ontario at its last session did pass an Act respecting the medical profession of the Province, in which Act provisions are made to place upon a common ground with ourselves a class of practitioners known as Homœopaths, and another class who style themselves "Eclectics," and whereas we, as members of a liberal profession, are unwilling to violate our clearly defined principles by associating with any sect holding views and theories we consider to be absurd and false, therefore, be it resolved, that the medical section of the Canadian Institute does, in the most emphatic manner, protest against such unprecedented and uncalled for legislation. Resolved—That this our protest be communicated to the Medical Council for Ontario, now in session, with the request that the Council take prompt and energetic steps to secure our release from associations so repugnant. On motion of Dr. Canniff, seconded by Dr. Rolph, the report was unanimously adopted. The meeting, which was large and influential, was then adjourned.

TRICHINA SPIRALIS.

Cases of Trichiniasis have occurred in several parts of Canada. In the present issue we give an article from the pen of Dr. Edwards, of our city, accompanied by a photograph of the worms, as found in ham, and human muscle. His observations are based on the College street cases, which have been proved beyond a doubt to have been caused by the ingestion of infected ham.

To our own mind the history of these cases, as given to us by the attending Physicians, was clear and satisfactory. Subsequently, at the request of Dr. Bessey, we removed a portion of muscle from the calf of the leg, in two of the patients who had recovered. In the one instance about five grains of muscular tissue was extracted from the lower part of the gastrocnemius; in the other about twelve grains was removed from the tibialis posticus muscle, and in both of these portions of muscle, some forty worms were found. The microscopic investigation was conducted separately, by Drs. Edwards, Howard, Girdwood and Fenwick, and in each instance with a successful result. This must be considered as conclusive evidence of the correctness of the views entertained of the nature of these cases from their very outset; even had we not the fact before us, of

the parasites having been demonstrated by two of the gentlemen above named, in portions of the ham which had been eaten by the parties, and which had been submitted to them for microscopic examination. We have been promised a report of the cases, which will appear in our June issue.

PROSECUTIONS FOR MAL PRACTICE.

We purpose expressing our opinion on several cases of prosecution for malpractice, which have engaged the attention of our courts of law in the several sections of the Dominion. Our columns are so crowded that we are forced to reserve these observations for a future issue.

THE ACTION AGAINST DR. STEPHEN FOR MALPRACTICE.

In this number of the Journal we devote some few pages of our space to record the judgment rendered by Judge Johnson in the case where a person the name of Craig sued Dr. Alexander D. Stephens, of Dunham Flats, for $5000 damages, for gross negligence and unskilful treatment of a fracture of the right thigh bone of the plaintiff's wife. It is some few months since it was delivered and it was due entirely to an accident that it did not appear at the proper time. It has not, however, spoiled by the delay, and is perhaps even more appropriate now, as we regret to notice at the present time a sort of mania for suits of this kind. The charge will well repay perusal.

DISTRICT OF BEDFORD—SUPERIOR COURT.

John H. Craig, Plaintiff, *v.* Alexander D. Stephens, Defendant. Final judgment was rendered in this case by the Superior Court at Sweetsburgh on the 18th instant, when His Honor, Mr. Justice Johnson, read the following remarks and exposition of the case:—

"This action is directed against a Surgeon for the recovery of damages to the extent of $5000 by reason of his alleged 'grossly ignorant negligent and unskilful' treatment of a fracture of the right thigh bone of the plaintiff's wife. It is answered to this demand that the treatment pursued was not negligent or unskilful, but on the contrary, as skilful and in point of fact, as successful as the circumstances permitted. The extent of the injury complained of is a considerable shortening of the limb, and the Plea admits that this contraction, which always takes place to greater or less extent, according to circumstances in cases of this description, might probably have been diminished by treatment which he would have followed but for the peculiar features of complication presented in this

instance, and the urgent request and entreaty of the patient for present relief. The case then presents the simple issue that is generally tried in such cases as far as the question of malpractice is concerned, and further puts forward the position that the treatment followed, whatever it may be considered to have been, was a treatment adopted at the instance and request of the patient herself. The principles upon which such cases depend possess nothing recondite or contradictory. The precise extent of the liability of practitioners is settled and defined in a series of English decisions, spread through the reports and presenting with every conceivable variety of circumstances, no material variation of doctrine. The rules of the French Law and of the Civil Law are the same as those adopted by the English Courts and by the Tribunals of the United States; *vide* Denizart, Guyot's Repertoire, Bell's Commentaries, Story on Bailments, and the 2 vol. of Kent's Commentaries. In a case of Leighton against Sargent, 7 vol. of Foster's New Hampshire Reports, page 460, the authorities from all these sources are conveniently referred to, and the ruling of the Court in that case laid down and enforced in an admirable manner the plain propositions of law upon which the liability of medical men was by that Court, and by all the decisions and authorities there cited, held to depend. These plain principles are adopted and followed by this Court in the present case, and are as follows:—A Physician's contract, as implied in law, is 1st. That he possesses that reasonable degree of learning, skill and experience which is ordinarily possessed by others of his profession. 2nd. That he will use reasonable and ordinary care and diligence, in the treatment of the case committed to him. 3rd. That he will use his best judgment in all cases of doubt, as to the best course of treatment. He is not responsible for want of success, unless it is proved to result from want of ordinary skill, or want of ordinary attention and care. He is not presumed to engage for extraordinary skill, or for extraordinary diligence or care. He is not responsible for errors of judgment or mere mistakes in matters of reasonable doubt and uncertainty.

Story 433, on Bailments. Tindall, C. J. Lanphier & Phipos, 8 c. & p—p. 475.

"To charge a physician or surgeon with damages on the ground of "unskilfull or negligent treatment of his patient's case it is never enough "to show that he has *not treated* his patient in that mode, nor used those "measures which, in the opinion of others, even medical men, the case "required, because such evidence tends to prove errors of judgment for "which the Defendant is not responsible, as much as for the want of reasonable care and skill for which he may be responsible. Alone it is not

"evidence of the latter, and therefore the party must go further, and "prove by other evidence that the Defendant assumed the character and "undertook to act as a physician, without the education, knowledge and "skill which entitled him to act in that capacity. That is, he must show, "that he *he had not reasonable and ordinary* skill, or that having it "neglected to apply it." The principle of the common law of England as to the engagement of the professional man for *a reasonable degree* of skill and *no more*, has been settled in the case of Physicians and Surgeons in Seare *vs.* Prentice. 8, East 347. Slater *vs.* Baker, 2 Wils., 359. Moore *vs.* Morguecowpt, 497. Hauke *vs.* Hooper, 7 c. & p. 81. Lanphier *vs.* Phipos. 8 c. & p. 475. Bell's Comm. 459.

Many cases in England deny the liability of professional men even to this extent, since they decide that the Surgeon or the Attorney shall not be held responsible except for *lata culpa*, or *crassa negligentia*, manifest fault or gross negligence. Godfrey *vs.* Dutton, 6 Bing 461.

Legh. Nisi Prius 196.

We now come to consider the evidence adduced in this case :—

It is extremely voluminous, no less than twenty-eight witnesses having been examined on one side and the other—and amongst them are eight doctors. Four examined on behalf of the Plaintiff and four by the Defendant.

Plaintiff's Doctors: Gibson, Chamberlin, Brown, and Brigham.

Defendant's Doctors: Cotton, Rowell, Valiquet, and Belhumeur.

It appears that the Defendant was unwell and unable to attend when first sent for after the accident had occured, and that a Doctor Gibson was the first Surgeon who saw the patient. He found her in bed with her thigh bone broken; it was a simple fracture. He placed the limb in an extemporaneous double inclined plane which he made at the time. He returned the next day, having been sent for before he was out of bed in the morning. He went again the third day and on entering the room where the patient was, he saw that the apparatus had been removed from the leg, and another substituted, and was told that Defendant had been there the previous evening and had adopted this treatment. This occured on the 18th March (the accident having taken place on the 16th) and Dr. Gibson did not see the patient again until about twelve weeks afterwards, —when she was apparently no longer under treatment. He found the leg crooked and shortened, from five to six inches, and the patient unable to use it. Soon after this a consultation took place between Drs. Gibson and Chamberlin, and they considered that nothing further could be done to obviate the shortening of the limb—which has since remained of the diminished length of five inches, the fracture being firmly united with the

ends of the bone overlapping each other, and the limb unable to support her weight, so that she is and must probably for the remainder of her days be a cripple.

It is unnecessary of course to recapitulate all the evidence that has been given; but after a most careful analysis of it, it appears that the following facts are indisputably established:

1st. That at the time of the accident the patient's age was about 63 years, and that her health at that time was feeble. That she had had disease of the kidneys and heart, and had been treated for both.

Vide Mrs. Clark's, Dr. Chamberlin's, Mrs. McGarry's, Mrs. Gilbert's, Mrs. Wilson's, Mrs. Perkin's, and Rowell's evidence.

2ndly. That a short time after the accident and while she was suffering from it and under treatment by the Defendant she had an attack of cholera morbus.

This appears by the evidence of Mrs. McGarry, Mrs. Gilbert, Mrs. Wilson, and Dr. Cotton. And it is stated by one of his witnesses that the Plaintiff himself during the absence of the Doctor, took upon himself to loosen the bandages around the broken limb.

3rdly. That during the treatment of the patient no complaint was ever made by her, her husband or any of her family of the treatment she was receiving; but, on the contrary, according to the positive statements of Dr. Cotton, Mrs. Holman, and Mrs. Connor, both the Plaintiff and his wife acknowledged in the most explicit manner that the case had turned out much better than they ever expected it would; that they were perfectly satisfied with the Defendant's treatment and it certainly appears that if any injury had arisen to the limb, from the mitigated treatment having been adopted instead of the severe course that would have been followed in the case of a stronger patient, such mitigation of treatment was acceded to by the Defendant only in consequence of the heart-rending appeals of the patient herself, "for God's sake to save her life, and not mind her limb." That the case was one of great danger and delicacy there can be from the evidence no doubt whatever, and indeed an accident of this extreme severity, occuring to an elderly female of enfeebled constitution, might naturally, according to the evidence of Dr. Valiquet, and Dr. Cotton in his second deposition, have been expected to terminate fatally. It has terminated, however, if I have rightly appreciated the evidence, not only without loss of life, but even without amputation, though indeed with most seriously impaired usefulness of the limb.

It appears further that a shortening of the limb to a greater or less extent, is an unavoidable consequence in such cases of fracture as this.

According to the Law, then, so clearly laid down by the authorities

cited, we are not now to try whether this woman might have been cured, for clearly no action will be against a Surgeon for omission or failure to cure *per se.*

We are not either to try whether there was on the part of the Defendant an error in judgment in the treatment of the case, for nothing can be more positive than the rule expressed, not for the first time it is true, but in so lucid and forcible a manner by Lord Chief Justice Tindall in the case of Lanphier *vs.* Phipos, 8 c. & p. 475.

"To charge a Surgeon with damages it is *never enough* to show *that "he has not treated his patient in that mode,* nor used those *measures "which in the opinion* of others, even medical men, the case required," because such evidence tends to prove errors of judgment for which the Defendant is not responsible, as he is for the want of ordinary care and skill, alone it cannot be evidence of the latter, and therefore the party must go further and prove by other evidence that the Defendant assumed the character of, and undertook to act as a physician without the education, knowledge and skill which entitled him to act in that capacity, that is, he must show that he *had not* reasonable and ordinary skill, or that having it, neglected to apply it.

This court has to determine whether, according to the evidence adduced, the Defendant treated his patient without ordinary care and skill; and this question must of course involve a consideration of all the circumstances, including as well the general state of health and constitution of the patient, as the peculiar symptoms that supervened after the accident. I am of opinion, after a mature consideration of every part of the evidence, that there is nothing to establish the want of ordinary care and skill imputed by the action to the Defendant. It is proved that he was assiduous in his attendance, one of the witnesses, a member of the family, deposing to his having been there every day. It is indisputable also under the testimony adduced that previous and complicated ailments had impaired the strength of the patient; that during treatment for the fracture of her thigh, she further underwent the enfeebling effect of what appears to have been a severe attack of cholera, and it is proved also in the clearest manner, that she not only implored the doctor to mitigate the necessarily severe treatment of such a case, and save her life at the expense of a more perfect cure of leg, but that she and her husband also have distinctly approved and praised the care and treatment bestowed by the Defendant. I do not here examine elaborately the question whether under all or any conceivable circumstances, a Surgeon is justified in listening and acceeding to the wishes of his patient—it is sufficient for the present case to observe that there is no

evidence of the want of ordinary and reasonable care and skill such as the circumstances would permit; and though those circumstances do not seem to me to require a resort to the defence that the treatment adopted was at the request of the patient, I cannot shut my eyes to the fact, that such a request, and made in the most earnest manner is clearly proved; and I do not see in such a case how the operation of the maxim *valenti non fit injuria* is to be avoided. In case of doubt —I would for the sake of the public—take the most lenient view of the conduct of professional men in all such cases as these, otherwise we should be exposed very naturally, in cases of such severe accident, to the refusal of Surgeons to take the responsibility of attending.

The judgment of the Court is as follows:

Considering that the Plaintiff has failed to establish by sufficient evidence that in the Surgical treatment by the Defendant of the fracture of the right thigh bone of Martha Gleason, the Plaintiff's wife, there was absence of ordinary and reasonable care and skill, and further that it is established in evidence, that such treatment was, and by the Plaintiff and his said wife hath been acknowledged to be careful, skilful and, under the circumstances successful beyond their hopes, and that any shortening of the limb beyond what is usual in such cases must, according to the evidence of record be attributed to a treatment rendered necessary by the condition of health of the Plaintiff's wife, and adopted at her own request, doth dismiss the said Plaintiff's action with costs distraits to Messrs. Cornell & Racicot, Attornies for Defendant.

Messrs. O'Halloran and Baker, Attornies for Plaintiff; Hon. Christopher Dunkin, Q. C., Counsel for Plaintiff. Messrs. Cornell & Racicot, Attornies for Defendant; G. C. V. Buchanan, Esq., Counsel for the Defendant.

DEATH OF DR. M. H. COLLIS OF DUBLIN.

It is with deep regret we this month chronicle the sad and sudden death of the gentleman whose name heads this notice. On Monday, the 22nd of March last, Dr. Collis removed, at the Meath Hospital, an upper jaw for a cancerous tumor, and in doing so punctured his finger. Nothing more was thought of the occurence till Wednesday morning when he was seized with a severe rigor. Other symptoms of blood poisoning soon followed, and eventually secondary pneumonia supervened from which he died at an early hour on Sunday morning. Dr. Collis was pre-eminently one of the rising men in Dublin, and his sudden death leaves a blank, not easily filled. He had made numerous contributions to the medical

literature of the day, several able articles on operative surgery from his pen having appeared during the last year in the Dublin Quarterly. His most valuable work is the volume, which he issued some four years ago, "On the Diagnosis and Treatment of Cancer and Tumors Analagous thereto."

To strangers visiting the Meath Hospital, Dublin, his kindness and attention was marked, and more than one on this side the Atlantic will hold his memory in fond remembrance. He sacrificed his life in his efforts to save that of another. No nobler proof could be given of the sublime character of our profession. He was only forty-five years of age

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THE BELMONT INEBRIATE RETREAT AND PRIVATE LUNATIC ASYLUM.

On our advertising sheet will be found the advertisement of the above institution, and we have much pleasure in drawing the attention of the profession to it. It is situated in the vicinity of Quebec, is the only one of the kind in the Dominion, and its existence, supplies a want which has been constantly felt, and which necessitated the sending the better class of insane patients to institutions in the United States. The proprietor of the Belmont Retreat has had extensive experience in the management of insane subjects, having been manager of the extensive Asylum at Beauport, and the resident physician has devoted much of his time to the study of insanity in its various phases; so that every guarantee is given that not only will the patients be well cared for, but the most judicious means used to promote their recovery.

THE MORTALITY OF MONTREAL.

Facts are stubborn things, and Statistics as a rule, do not lie. When we think of the large mortality of Montreal, we sometimes wish that they did, and that it was not true that we yearly sacrificed so many hundreds on the altar of stupidity and lukewarmness. Montreal is not by nature an unhealthy city; on the contrary it has many natural advantages which in a sanitary point of view, might be used most profitably. But we neglect these, as a rule we neglect everything that tends to increase the salubriety of our city, and the result is that we have the mortification of knowing that we live in not only the most unhealthy city on this continent, but almost the most unhealthy city in the civilized world. Our death rate according to an able report recently printed by the Sanitary Association is 25 per thousand, while according to the same report in

the six parishes adjoining Montreal it is only 1. 47 per thousand. As the returns in the latter case are probably somewhat incomplete it will be safe to allow a margin and put the mortality at 2 per thousand. which contrasted with that of the city causes the latter to stand out in all its awful proportions. Looking still more closely at this report we find that only 27 per cent of the interments of last year were of adults, and in this calculation children from 12 years of age are included. This brings us face to face with the startling fact that 73 per cent, or nearly three fourths of our mortality of were young children. This is a sad, sad story, and it seems to us that those who after reading it can remain calmly. and not exert every energy in favor of sanitary reform, must be destitute of every human feeling. Our Health Committee, at least some of them, have a correct conception of their duties, and if the Council could only be got unanimously to see the great importance of this Committee, and vote them a sum comensurate with its importance, some at all events of the causes of our excessive mortality might be removed. It is important to us as a city, that this state of things should not continue and we raise our voice in support of the very admirable report of the Sanitary Association.

SIR DUNCAN GIBB.

We are sure the numerous friends of this well known Canadian Graduate will learn with pleasure that he delivered the ninety-sixth Anniversary Oration of the Medical Society of London, at its opening meeting in the first week in April. We congratulate our friend upon the distinguished position he has attained among the medical celebrities of London.

The *Lancet* says a most extraordinary case of mutilation is now in the wards of Guy's Hospital in the person of a young man, whose wife, it is said, grasping his genitals with one hand, with the other made a cut from above the symphysis pubis downwards into the perineum, sweeping close to the anus, and upwards again to the point at which it commenced. By traction "the whole skin thus included was removed, together with one of the testicles, the skin of the penis stripping off like the finger of a glove, and being cut through near the prepuce. The penis, except that it is entirely divested of skin, is undamaged, and so is the testicle which remains. An attempt which was made to gouge out the man's eyes was successful, it is feared, in destroying the sight of the right eye; but the left is probably not much injured. So far as the man's general condi

tion is concerned, it is hoped, and we believe expected, that he will recover; but it is impossible to foretell what will be the state of the genital organs when they have been submitted to the processes of granulation and cicatrisation."

Mr. Hutchison performed lithotomy at the London Hospital recently in a case which is possibly unique. The patient, a labouring man, stated that whilst drunk he had lost a No. 10 flexible catheter, and that he believed that he had passed it into his bladder. His story seemed almost incredible, but the operation proved it to be quite correct. The catheter, a No. 10 with a large mount at the end, was removed whole. The exact manner of its introduction is not known, but possibly the man had employed the stylet to push it down.

THE INTERNAL USE OF CARBOLIC ACID IN SKIN DISEASE.—At the Vienna Medical Society, Dr. Kohn gave an account of the internal employment of carbolic acid by Professor Hebra. The most remarkable effects were produced, hyperæmia disappearing, and the irritation being relieved. Trials have as yet only been made in psoriasis, prurigo, pityriasis, and pruritus cutaneus. It is best administered in the form of pills, increased from six grains to twenty grains per diem. The solution is repulsive to most patients.—*Wiener Med. Woch.*

MODERN HOMŒOPATHY.

It is only rarely that we have room for reports from homœopathic practitioners. But we do give place with pleasure to the following extract from the proceedings of the Cleveland Homœopathic Medical Society recently held in that city.

"Dr. S. R. Beckwith asked if the members had any experience to report on the use of bromide of potassium in epilepsy; said it was a pretty sure remedy, given in sensible doses. He related several cases favourably affected by its use.

Dr. P. Wilson reported that late clinical reports had shown that in bad cases of epilepsy it was safe to give as high as sixty grains of bromide of potassium three times daily, that such doses caused temporary insanity which might be continued many weeks, and yet disappear on ceasing to use the medicine."

The report was accepted.

This is modern homœopathy. The reports of the London Homœ

pathic hospitals show a partiality for similar "massive" doses, and on the continent the follies of Hahnemann are discontented similarly in practice.

We rejoice that homœopathists see the propriety of this; we are only sorry that they do not more openly acknowledge the truth about it. As to the "Law of the Similars," who pretends that bromide of potassium will produce epilepsy?—*Philadelphia Med. and Surg. Reporter.*

Mr. Erasmus Wilson has munificently presented to the London College of Surgeons the sum of £5,000 to endow a Professorship of Dermatology—the branch of our Art to which he has devoted his life and which he has done more than any one living to advance. The professorship is not to be confined to Fellows of the College thus benefited, but with true liberality is to be conferred on the best man whatever his legal qualifications.

MEDICAL NEWS.

Reading, Penn, has a Physician who visits his patients on a Velocipede. —Robley Dunglison Emeritus, professor of the Institutes of Medicine in the Jefferson Medical College, Philadelphia, died on the 1st of April, in his 72nd year. He was born at Keswick, Cumberland, England, in 1798, and graduated in London in 1819.—There is a Doctor for every one thousand inhabitants in Paris.

Sir Joseph Oliffe, physician to the English Embassy at Paris is dead, His career was a romantic one. He went to Paris quite young, and was obliged to run messages to earn his living. Subsequently he studied medicine and graduated in 1840. Soon after, a beautiful English woman, daughter of the millionaire, Alderman Cubitt, promenading in the boulevard, slipped and dislocated her ancle. Dr. Oliffe was passing and attended to the sufferer. Soon after the young lady declared to her father her affection for the young physician. After a prolonged resistance from the parents, the young lady carried her point and married Dr. Oliffe. Patients soon flocked to him, his fortune was made. Shortly after he was appointed physician to the embassy, and received the honor of knighthood. Such is life.

A child died recently in St. Louis, Mo., from an over dose of hive syrup. An ounce was given from which the child died in four hours. —Chocolate drops are recommended to be taken after quinine in solution. They completely remove the bitter taste.

The Philadelphia *Medical and Surgical Reporter* says it is rumored that Dr. Brown Sequard has acceptod a chair in the Paris Faculty of Medicine. This celebrated physician, it adds, seems to have the faculty of accepting professorships, retaining them for a year or so, and then abandoning them.—The same paper states that the students of the Women's Medical College in Philadelphia, having been informed that the clinical lectures of the Philadelphia Hospital were free to all students, went in, in a body, and took their seats. The male students were uproarious, clapping hands and stamping feet, but the females were as dignified as possible. Professor Stillé, who was the lecturer, in a neat speech, bade them welcome, and then began his lecture: *Ladies and Gentlemen*. They were subsequently invited by Dr. Lewis to visit the wards. [We are totally opposed to females becoming general practitioners, and wish we could see the same opinion a little more firmly held by many of our American friends. The question has now assumed such proportions there that it must be squarely met, and we trust that the forthcoming meeting of the American Medical Association, which takes place at New Orleans in May, will see the matter decided. Woman has her peculiar sphere of usefulness and was never by nature intented to dabble in the mysteries of general medicine. The physicians of the Philadelphla Hospital may have been peculiarly placed, or Dr. Stillé may be a warm advocate for female physicians. Whichever may be correct we regret the action taken. EDS. CANADA MEDICAL JOURNAL.—]Dr. Ripply, physician for the poor in the first district of Washington, was recently sent for to see a Mrs. Martin. He prescribed thirty grains of Dovers powders, and ten grains of sulphate of morphia, and liquorice powder sufficient to make ten pills; one every two hours. She went to sleep after the first, was awakened by her husband and given the second, and as might be expected she never awoke again, but died the following morning early. Washington has certainly queer doctors to attend to its poor.—It has been decided that the new Edinbourgh Royal Infirmary, shall be built upon the site of the George Watson Hospital—Mr. Maunder surgeon to the London Hospital records in the Lancet, seven cases of primary excision of the elbow joint, for severe injury, five of them recovered and two died, one from pyemia, and the other from a fracture of the skull, with which the case was complicated. Mr. Maunder states in tolerably healthy subjects he would remove large sections of the humerus and the bones of the forearm, rather than subject the patient to the ordeal of an amputation.