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LEPROSY AND THE LEPER SETTLEMENT, MOLOKAI, SANDWICH ISLANDS.

By H. N. VINEBERG, M.D. (McGill), Portage La Prairie, Man.

On a sea-level plain, comprising about 20,000 acres, on the windward side of Molokai Island, hemmed in on one side by the waters of the Pacific, which, washing over the coral reef, form a foamy white line, and closed in on the other side by a perpendicular precipice 2,500 feet high, is what is known as the "Leper Settlement" of the Hawaiian or Sandwich Islands. Before taking my departure from these tropical isles, I paid a visit to this colony of misery. I left Honolulu on Monday evening in company with Dr. Neilson, the medical superintendent of the settlement, and Mr. Freeth, the superintendent of the Honolulu Water-Works, who was sent by the Board of Health to report upon the expediency of increasing the water supply of the settlement. The small coaster, the "Lebua," on which we took our passage, only touched on the leeward side of the island. This we reached about daybreak, after a night's not very gentle rocking in the cradle of the briny deep, during which we were frequently refreshed by the spray from the waves washing over the bow of the craft. There were a few natives living on the beach where we landed, with whom we breakfasted on "poi and fish," and from whom we hired saddle-horses to take us to the "pali" (precipice) overlooking the settlement, a distance of some ten miles. After riding about six miles, we came to the

residence of Mr. R. W. Myers, the general superintendent of the settlement, an intellectual and highly-respected Hollander, but who had resided on the island for upwards of thirty years, and was the father of a large half-white family. We met with kind hospitality at his hands, and were made to partake of a more substantial breakfast than that we had already feasted on. Mr. Myers kindly accompanied us to the "poli," where we had to discard our horses, and make the descent of the perpendicular precipice as best we could, having at times to hang on literally with our "hands and teeth."

The view from the poli was one not easily to be forgotten, and which fully inculcated the meaning of a "living grave!" At our feet lay what appeared from that height (the grass being withered and dry) a sandy, arid plain, without a patch of green or a tree to relieve its barrenness. At either end of the plain were a number of small huts, most of which were white, some of a dark brown; beyond was the creamy surf line and the wild waste of waters of the Pacific, blending in the distant horizon with a wavy bank of fleecy white clouds. Just then not a living object could be seen moving about below, and the feeling of gloominess and depression with which the landscape and its associations impressed one is not to be expressed in words.

After several narrow escapes of going down faster than might be compatible with the process of respiration, we succeeded in reaching the plain beneath. There we were met by three of the colonists on horseback, with the disease in an advanced state, who had come to greet us—having previously heard of our intended visit—and exhibit themselves as objects of curiosity. They seemed well pleased with my close observation of them, but did not conceal their disgust at my friend Mr. Freeth, who lost no time in putting himself at a safe distance on their windward side. One of these had the "leonine expression" well marked. The skin of the face was extremely hypertrophied; the eyebrows were devoid of hair, and every feature of the countenance was uniformly enlarged. Though only about 15 years of age, he had the appearance of an octogenarian, whose irregular and dissipated life had left its marks on the face by

knobby and tubercular projections, and deep furrows. He seemed quite happy, and took no small degree of pride in the fact of my taking more interest in him than in his companions. The colony is divided into two settlements, "Kalawao" and "Kalapapa," about two miles apart. At Kalawao are situated the hospital buildings, the doctor's house, the dispensary, a Catholic church, and the residence of the Catholic priest, Father Damiens. The hospitals comprised a dozen or so small wooden buildings, situated on an eminence, quite close to the beach, and were closed in by a fence. When the disease has made such sad havoc that the lepers are unable to attend to their own wants, they are transferred to these, and are there waited upon by their fellow lepers. The sight here was truly pitiful and revolting. Squatted or lying prone on their respective mats were the yet breathing masses of the loathsome disease, whose glistening and vacant stare, where the eye was not an ulcerous mass, had a ghastly and horrifying look. Father Damiens, who accompanied me through the hospital buildings, every now and then would say, "Doctor, you have not yet seen the *worst*. I will keep that for the last." We finally did come to the *worst*, in the form of what was once a Chinaman, but whom the disease had so transformed that all one could recognize was the form of a human being. It is impossible to give a true picture of the spectacle that was squatted before us. Take a human skeleton, with its fingers and toes amputated, put it on the floor in a sitting posture, with the knees well drawn up and the thighs flexed, envelop it loosely with a dark skin, completely covered with sores or scabs, place in each orbit a round, ulcerous body, in the mouth the stump of a tongue, and give to this a weak respiratory act, and you will have some idea of the "leprous Chinaman." Father Damiens said to me, "John is much better than he was a fortnight ago! We thought then we would lose him by an exhausting diarrhœa, but by allowing him daily a little opium, to which he was accustomed, he has rallied, and is doing very well." The breathing skeleton moved its short stump of tongue, probably to express its gratitude to the father for his kind attention. There were over 40 patients in the hospitals. The total number

of lepers in the settlement at the time of my visit was 723, of whom 440 were males and 283 females. Besides these, there were 60 "kokuas," the wives or husbands of lepers in the settlement, but who showed no signs of the disease themselves. Among the former were seven white people, who, different from the natives, fully realized their position, and looked upon death as a blessing and the only relief to their sufferings and misery. The natives appeared quite contented and happy, and as many of them had horses, they amused themselves by racing up and down from one settlement to the other. On our first night, while sitting on Dr. Neilson's verandah, we were serenaded by the band of the colony. The band consisted of a large and small drum, and three "penny whistles," the music of which one could scarcely distinguish from that supplied by so many fifes. They played very well, having belonged to the "Royal band" previous to their banishment. The two drum boys were each minus their four left fingers, and two of the "whistle boys" were wanting two and three fingers respectively of the right hand. On the second night we were serenaded by a band of choristers, but the cracked and husky voices of its diseased members were neither gratifying nor harmonious to the ear. The carpenter of the colony had his left hand entirely fingerless, but the heads of the metacarpal bones were enlarged, so that on bringing together that of the thumb and index finger a small opening was left, into which he would introduce, and so keep in position, the nail he wished to drive. It was highly interesting to note some of the ingenious expedients many of the fingerless unfortunates were driven to, but space will not permit me to give any more instances. The rations of food were ample and of good quality, being supplied by the Board of Health, and served out by Mr. Clayton Straune, the deputy superintendent, himself a leper. Each leper received weekly 21 lbs. *paioi*, the native food (the *arum esculentum* baked and slightly pounded), and from 4 to 6 lbs. of fresh beef. Other necessaries of life the lepers or their friends had to pay for, and could be obtained at cost price at a store in the settlement, kept by the Board of Health. When a fresh batch of exiles come to the settlement, they are cast upon

the hospitality of those who have preceded them, until such time as their friends erect a hut for them, the result of which is that all the huts are filled to overcrowding. But this the natives rather like. Their chief complaint had been the want of water, and with a view to remedy that want the Board of Health had sent Mr. Freeth, who, after a thorough examination of the surrounding parts, came to the conclusion that an "artesian well" would be required. What action has been taken upon his report I am unable to say. The lepers from the various islands, after being certified as such by the Government physician of the district, are sent first to Honolulu, and when the number reaches 15 or 20, they are shipped in a schooner, kept for the purpose, to the settlement, Molokai. It occurred to me once to be present at the departure from the Honolulu wharf of the schooner with its living cargo. The lepers were sitting and lying about on the deck, and the wharf was thronged with the friends and relatives of the exiles. When the schooner weighed anchor, and was setting out into the stream, the loud and unearthly wailings of those on shore, and the husky cries and moans of those on board, were heartrending in the extreme. The schooner occasionally meets with adverse winds, and the lepers are exposed to a wet deck for two and sometimes three days before reaching their destination. Such was the experience of the immigrants who landed a day before my visit, one of whom died from the exposure an hour after landing, and another jumped overboard when a day out, and so ended his misery. The embryo Hawaiian Government is severely burdened by the expense of maintaining "the leper settlement," and though the state of affairs is not all one would wish, the government is doing all it reasonably can for the poor unfortunates. If a portion of the immense sums that have been collected from all parts of the civilized world to Christianize the Hawaiian race were devoted to ameliorating the condition of the lepers, more practical good, at least, would be obtained. The natives, as I have already said, appear tolerably contented, but the condition of the white lepers is very sad indeed. One poor fellow in particular was an object of pity and commiseration. He was of American extraction, and had re-

sided in the settlement for six years. The disease had rendered him helpless, but he had no other attendance than that which a neighbor leper favored him with at times, and the frequent kind services of Father Damiens. His abode consisted of a small, low, dingy room, the only furniture of which was a roughly-constructed bed, on which the dirt-blackened clothes lay all in a heap, a rough deal table, a box, and a wooden chair. The sun's rays were pouring unmercifully through the uncurtained and dirt-begrimed window, and the heat of the room could only be compared to that of a heated furnace. A week or two before he had an attack of dysentery, and he told me he surely would have died from want of proper nourishment were it not for the Catholic priest, who used to bring him every day delicacies prepared by his own hand. He wanted to know if I was an American, and he thought, if I would only state his case to the United States authorities, they would see to his comfort for the short period he was destined to exist in this world. I informed him of my nationality and inability to move the U.S. Government on his behalf, but promised to make his case public at the first opportunity that presented itself.

Here let me say a few words about Father Damiens, the Catholic priest, whose name so frequently figures in this paper. When one sees a missionary at the head of a wealthy sugar plantation, and surrounded by all the luxuries of civilization, he may be pardoned if he has some suspicion as to the sacrifice and martyrdom of missionaries in general. But here was a case where the most worldly and cynical could cast no slurs. With youth, health, culture, refinement, and every prospect of advancement in the church, this man voluntarily exiled himself to this abode of misery eight years ago. During my stay of two days in the settlement I had good opportunities of making ob servations, and I noted that for every one, indiscriminately, he had a kind smile and a word of sympathy, and all—Catholics, Protestants and heathens—looked upon him as upon a common father. Miss Bird, herself a Protestant, in her book entitled "Seven Months among the Sandwich Islands," writes thus of him: "It was singular to hear the burst of spontaneous admira-

tion which his act elicited. No unworthy motives were suggested, all envious speech was hushed; it was almost forgotten by the most rigid Protestants that Father Damiens, who has literally followed the example of Christ by 'laying down his life for the brethren,' is a Romish priest, and an intuition higher than all reasoning hastened to number him with 'the noble army of martyrs.'" When one takes into consideration that at the time of going to the settlement he had strong opinions upon the contagiousness of leprosy—which he still held,—one can readily conceive with what feelings he entered upon his duties.

The question of leprosy is growing to be a very serious one in the Sandwich Islands, and considering their proximity to the States and the inter-travel between the two places, it is one also which should engage the attention of this continent. The disease is spreading rapidly on the Islands, and the number in the settlement does not represent one-third of the lepers that are free and mixing with their fellow-beings, both colored and white. His Excellency, H. A. P. Carter, the Minister of the Interior, made praiseworthy efforts during last summer to weed out all the lepers that were free, and have them sent to the settlement for isolation, but in this he was thwarted by the natives themselves, and in a less degree by the head of the Government. For some inexplicable reason, a native would sooner undergo any other form of banishment than that to the island of Molekai. Instances are known where they have lain crowded in caves for years rather than allow themselves to be taken by the authorities and forwarded to the settlement. Some have become so desperate as to shoot at the official who tried to effect a capture. During my term of a year as government physician in the large district of Kuco, on the Island of Hawaii, only two lepers were brought to me by the deputy sheriff for examination and certificate. We knew of many more in the district, but they were never to be seen when the sheriff or his police were in the neighborhood.

It was in 1865 that the Hawaiian Legislature first passed an Act to prevent the spread of leprosy, and in the year following the "leper settlement" was established. I found it impossible to obtain from the authorities any figures on the subject, and

those following were obtained from outside sources. Between 1866 and 1874, 1,145 were sent to the settlement, of which number 442 died during that period. At one time in 1875 there were 703. Through the kindness of Dr. Emerson, the former resident physician, I am enabled to give full figures for the year 1879:—

Number of adult males in the settlement January 1st, 1879		469
" " females " " " "		302
" children under 10 years—Males		14
Females		15
" births during the year		6
" lepers arriving during the year—Males		66
Females		31
" kokuas proclaimed lepers during the year—Males		8
Females		8
" deaths during the year—Males		124
Females		79

The origin of the disease on the Islands is enveloped in considerable obscurity, but from all available accounts, traditional and written, it appears that the first case or cases were observed somewhere about 1840 and 1842. It is known by the natives as "mai alii" or "mai paki." "Mai alii" signifies *chief's disease*, and it received this cognomen from the tradition that the first case was recognized (1842) in a chief named "Maca," the uncle of the present Queen Dowager Emma. "Mai paki" means *Chinese disease*, and this epithet receives two explanations. One is (the most likely one) that the disease was first recognized by a Chinaman, who had seen similar cases in his own country; the other, that the Chinese imported the disease. I may say that the former explanation is that given by foreigners and intelligent natives and half-castes, while the latter is held only by the ordinary natives. An odd case, after the above, was observed here and there until 1857, when an epidemic of small-pox instituted throughout the Islands indiscriminate vaccination. The act was performed by any and everyone, and lymph was taken from arm to arm. Within a few years after this it was discovered that cases of leprosy were cropping up pretty thickly all over the Islands, and the disease has been gradually and steadily adding to the number of its victims ever since. There

can be no doubt, I think, as to its propagation by vaccination. Most authorities on the subject admit that as one of the modes, and several cases on the Islands have been directly traced to that source. The older medical men on the Islands, who have had considerable experience with the disease, are very decided and unanimous upon this point. Cohabitation with a leper is also known to be a fruitful source of infection, and it would appear that when the disease is contracted in this way, syphilis forms an inexplicable factor, being, in the majority of cases, a precursor of the genuine malady. So much is this the case, that some of the older physicians of Honolulu regard leprosy as simply an advanced state of syphilis. Dr. McKibbin, surgeon to the Honolulu Hospital, and an active practitioner for over 20 years on the Islands, told me that he had seen, time and again, pure, unmistakable cases of syphilis followed by leprosy. Under an anti-syphilitic course the symptoms of the former would disappear, while those of leprosy would only be confirmed. In the majority of his cases the symptoms of leprosy would only show themselves after the disappearance of the syphilitic symptoms, but in some they would go hand in hand, and modify one another to a more or less extent. The native custom of herding together, and eating with their fingers out of a common calabash, and smoking the same pipes, are other modes of spreading the disease. But, admitting this, it is difficult to explain the immunity from the disease many of the "kokuas" experience. I have already said that the term "kokuas" applies to the non-lepers in the settlement, who have followed to the place of banishment their wives or husbands, as the case may be, rather than break the conjugal tie. But it would be wrong to infer from this that the tie is very strong among the natives. At the time of my visit there were sixty kokuas, some of whom had resided in the settlement since it was instituted, but who showed no signs, subjective or objective, of the disease. I will give notes of a few of these cases.

No. 1.—Kuloa, aged 55, female; in 1854, married a leper, with whom she lived five years, and had four children. Has lived in settlement since 1866 with her present husband, and with whom she has had also four children. All her children died

before attaining the age of 12 months. Had syphilis two years after first marriage. Shows no signs whatever of leprosy, and is apparently in perfect health.

No. 2.—Kulchua, aged about 40, laundress for the hospitals for the past seven years. Lived as wife to a leper for 13 years. Has had four children, two of whom died at the respective ages of 2 months and 3 years. The second child is a leper, and is 15 years of age; the fourth is 12 years, and is quite healthy. Shows no traces of leprosy, and is robust and hearty.

No. 3.—Pukoku, aged 45, male; lived with a leprous woman for 12 years, and has resided in settlement 8 years. Has no suspicious symptoms of leprosy, and apparently is in the best of health.

But, on the other hand, it must be borne in mind that they do not all enjoy this immunity. A glance at the above figures for 1879 will show that in that year 16 were pronounced lepers by the resident physician. Several cases of cure of the disease are reported on the Islands, but as at that period the symptoms are very obscure, and often are not to be distinguished from those of syphilis and other skin diseases, much room is left for doubt. I saw several cases in the Honolulu Hospital of a doubtful nature, but who were undergoing the treatment of leprosy. Many of these, I thought, might safely have been put into the category of tubercular lupus of the face. I saw a couple of cases in whom the ulnar nerve had been stretched by Dr. McKibbin for contraction of the little finger and the adjacent one (an early symptom of leprosy), with marked benefit for the time at least. That was as much as the doctor expected. The treatment of the cases in the hospital was of an alterative nature, combined with local applications, chiefly caustics, to the patches of eruption, and the use of electricity in cases of defective enervation.

I am keenly alive to the deficiencies of this paper, but if it move a few charitably-inclined people to take an interest in the poor unfortunate victims on the Sandwich Islands, and awaken the profession to the danger of the disease invading this continent, it will have served its purpose.

VALEDICTORY ADDRESS

DELIVERED TO THE GRADUATING CLASS, 31ST MARCH, 1882,

BY D. C. MACCALLUM, M.D., M.R.C.S., ENG.
Professor of Midwifery and Diseases of Women and Children, McGill University.

Gentlemen, Graduates in Medicine,—There occur periods in the lives of most men, when, having reached a certain point in their career, having accomplished a definite purpose, it is wise and salutary to take a retrospective glance over the work done and the causes which have led to ultimate success; and, further, to consider seriously the impending future with all its urgent demands, its grave responsibilities, and its varied possibilities. To each one of you this day is such a period. When you look back to the commencement of the four years or more which you have devoted to the study of medicine, you will readily recall the feeling almost of dismay with which you regarded the extensive curriculum of study presented to you. For medicine, in common with other sciences, has made wonderful progress in late years, and the difficulties of acquiring a thorough knowledge of it are rapidly increasing, Indeed it has become a serious question with thoughtful and observant members of the profession, more particularly with those engaged in teaching, whether the demands made on the student are not too onerous for the limited time allotted to him to fulfil them. It would really appear either that there should be a more restricted curriculum than the present one, or a longer time insisted on to master the subjects included in it. That you should, in the short space of four years, have fulfilled the demands made on you, and have acquired such an amount of professional knowledge as to have enabled you to pass successfully the rigid examinations to which you have been subjected, is in the highest degree creditable to you, and is an earnest that you are not wanting in those qualities which go far to ensure success in life. Your experience during these years will have impressed upon you the important truth that success is not due to a happy combination of fortuitous circumstances, but that it is the result of determined, persevering

effort. Genius not infrequently attains its ends with apparently slight effort, but, as a general rule, that inborn aptitude to master certain departments of knowledge which is called *genius*, if not associated with a willingness to work, rarely accomplishes much. A man of average brain power, who pursues his object with singleness of purpose and with unflagging industry, will do more in the way of acquiring knowledge, and of adding to the sum of that already existing, than one more highly gifted by nature, but who is lacking in energy and perseverance. It is not the mere possession of talent that enables a man to secure a prominent position amongst his fellows. If he attain a front rank, it will be due mainly to his capacity for work. And the work, too, must be regulated, continuous, and directed towards a definite end. For labor is too often wasted when it is expended on a diversity of objects having no relation to each other, and not one of which is made the great aim of the worker's life. Another truth which you will have learned is, that mental labor is not altogether a task, but that in the pursuit of knowledge there is a pleasure which amply repays all the labor bestowed upon it. Although at times irksome, and attended by frequent discouragements, it affords the highest gratification to the noblest part of man's nature. In the cultivation of his intellect, in the storing of his mind with important truths, and in the effort to perfect himself in some honorable calling in life, man finds some of his highest and purest enjoyments. Apart from any consideration of the material advantages which may attach to a thorough professional education, or the fame and honor which may be the outcome of successful scientific investigation, there is in the acquirement of the one or the prosecution of the other that which eminently satisfies the thirst for knowledge, which is a leading characteristic of the mind of man. But with the satisfaction derived from present success, there is always associated a feeling that comparatively little has been accomplished, and this becomes a powerful incentive to further effort. And yet, as the eve approaches of a life honestly and devotedly spent in the cultivation of science, the most enthusiastic votary feels like Sir Isaac Newton, as if he had gathered a few of the pebbles only from

the shores of the knowable, while the vast ocean itself stretches out before him unexplored. "I live joyless in my eighty-ninth year," writes the great Humboldt to his friend Varnhagen, "because of the much for which I have striven from my youth so little has been accomplished." So it is, and so it always will be. Despite his loftiest attainments, man always feels an intellectual want that must be satisfied, an intellectual void that must be filled. And, what is most singular, the more varied and profound his knowledge—the deeper he may have penetrated the arcana of Nature—the richer and more glorious the truths he may have brought thence, the more weak and ignorant does he appear to his own scrutinizing introspection. The general public, conscious of the vast distance that intervenes between their own acquirements and his, speak wonderingly of his great intellect and accumulated stores of learning. Whilst he, the scholar and wise man, according to the testimony of all, in view of the higher and still higher heights of truth remaining to be scaled, and whose outlines are appreciable to his exalted sense alone,—in view of the ever-widening and ever-lengthening vista that opens up before him as he pursues his travels into regions of thought and territories of investigation never before penetrated,—bewails his own littleness, his want of energy and mental vigor: for knowledge, as a rule, certainly has the effect of making its most favored votaries the humblest and least self-conceited of men. He regards the three-score years and ten allotted to man in this state of existence a mere fleeting point of time—all too short a period in which to grasp even a tithe of what presents itself for investigation,—and he therefore looks hopefully forward to an infinite future, where his soul may bathe without check or limit in the pure untroubled waters of truth.

That knowledge sometimes "puffeth up" its possessor is as true now as in the days of Saul of Tarsus, and probably more generally true now than at that time. If the *dictum* of that great and gifted mind were more generally known and received at the present day, and the conduct of men influenced by it, there would be fewer exhibitions of those pretentious and obtrusive claims of individuals to be regarded as burning and

shining lights of science,—the ranks of scientists, as they call themselves, would be greatly thinned, and, I fear, that a goodly sized volume containing sketches more or less brief of the learned and distinguished men of this Dominion would shrink to one of very modest proportions. The *dictum* of St. Paul is: "If any man think that he knoweth anything, he knoweth nothing yet as he ought to know." Lay this, then, to heart; and whilst it need not prevent you from indulging a feeling of proper pride in accomplished work and its favorable reception by your fellows, it will save you from overweening vanity and a constant and restless craving for notoriety.

Your success in obtaining the degree of Doctor in Medicine and Master of Surgery of this University we may consider then as being due mainly to three causes,—*Capacity for work*, *Love of work*, *and Will to work*; the last being by far the most important. The professors in this Faculty, while rejoicing sincerely in your well-merited success, take no other credit in the result than simply that of having endeavored, as far as in them lay, to give proper direction to your studies and to strengthen and develop in you these all potent powers. And you have, therefore, the proud satisfaction of knowing that the honorable position in which you stand before your friends to-day is one which, in an important sense, you may be said to have attained *for* yourselves—*by* yourselves. Provided with the diploma which has just been placed in your hands, and with the power to claim all the privileges which it confers, you have now, especially, to enter into the struggles and contentions of life, and prove what there is of mettle in you. We would not that any one of you should prove a failure, and were it in our power to make you able and respected practitioners of medicine, good and upright men, loyal and patriotic citizens, willingly would we exert that power in your favor. But in this, also, we can only advise: we can only erect for your guidance a few finger-posts pointing the way of duty and responsibility. The power of making or of marring your own fortunes lies entirely with yourselves.

The great object of your life henceforth must be the prevention, alleviation, and cure of disease. And when you reflect that this

involves the comfort and happiness of your fellowmen and the saving of human life,—preserving the bread-winner to those dependent upon him, the mother to the love and devotion of husband and children, the children to the yearning affection of parents,—you cannot but be strongly, even painfully, impressed with the magnitude of the responsibilities which will devolve upon you. Seek not in any way to weaken this impression, but let it have its full influence as an incentive to unremitting attention to duty. The way of duty in the profession of medicine is not always smooth and pleasant, but frequently rugged and wearisome. It can only be successfully followed by the exercise of patience, self-denial, energy and perseverance—qualities which you should carefully cultivate, for he only who possesses them is fitted to surmount difficulties or to shape events so as to favor the end he may have in view. At one time, cheered by success and the heartfelt gratitude of those whom you may have been the means of raising from a bed of suffering and disease, you will experience that sense of satisfaction, often amounting to exultation, which is felt by those who have accomplished a great and beneficent work, and you will rightly conclude that the ways of medicine are *sometimes* the ways of pleasantness. At another time, depressed and dispirited by failure in your efforts to save life, or by unmerited slight and the withdrawal of confidence by those who ought to consider themselves under obligations to you, you will again rightly conclude that the ways of medicine are *not always* the ways of pleasantness. But whatever your triumphs or your reverses, you must be equal to the former and rise superior to the latter. Undue elation and undue depression are equally proofs of weakness. The strong, self-reliant man, conscious of the integrity of his motives and his actions, courageously accepts whatever verdict may be passed upon them, and finds in the approval of his own conscience that which will sustain him under the most trying circumstances. So long as he feels confident that the end he has in view is laudable and good, he steadily pursues his course, feeling certain that the right thought and the right deed must ultimately prevail. The weak, shrinking man, on the other hand, has too often scant

faith in his own judgment and convictions. Haunted by a constant dread of the adverse opinions of his fellows, he pursues a vacillating, hesitating course, and as the world smiles or frowns, so is he supremely happy or miserably wretched. But while *self-reliance* is always to be commended, as much cannot be said of *self-confidence.* The most disastrous events occurring in daily life are commonly the result of some serious blunder committed by a capable but too confident man. A serious blunder in the practice of medicine would be something akin to a crime. No matter then how thorough you may consider your knowledge, always act with an ever present conviction that it is quite possible to make a mistake. A certain amount of skepticism as to your own infallibility will prove one of the best safeguards against careless or precipitate action.

Although you are fully fitted by the course of studies which you have just completed to enter upon your life-work and assume its responsibilities, if you desire to excel you must exhibit the same capacity for, the same love of, and the same will to work that have so far crowned your efforts with success. The marked impetus which has of late years been given to experimental inquiry in all departments of medicine still continues. The restless, questioning spirit of the age has seized the master minds of the profession, and, as a consequence, great and important additions are constantly being made to our knowledge of the pathology, symptoms and treatment of disease. So numerous and active are the workers and so wide-spread their investigations, that you will find it no easy matter, even while using due diligence, to keep yourselves abreast with the results of their labors. This will be especially the case when your practice has become so extensive as to demand most of your time and attention. It is, therefore, of the highest importance, while you have the leisure, that you should lay broader and deeper the foundations of your knowledge by a careful study of the works of the classical authors in medicine, and build up and complete the superstructure as much as possible by additions from the works of the men of to-day. It is not to be expected, however, that professional studies should occupy your

time to the exclusion of all efforts to increase and advance your culture in other ways. Medicine must certainly have the first place, and dominate over all other aims or objects, but at least a certain portion of your time must be employed in improving your mind in other directions. What you have to guard against is, that no other pursuit shall engage your attention to the neglect of professional studies. For, as Milton has well expressed it:—

> "Not to know at large of things remote
> From use, obscure and subtle, but to know
> That which before us lies in daily life,
> Is the prime wisdom! what is more, is fume
> Or emptiness, or fond impertinence,
> And renders us in things that most concern
> Unpractised, unprepared, and still to learn."

In all the relations of life be upright, honest and true. Never deviate from the line of rectitude and honor. To your patients be ever the earnest, attentive physician, willing to submit to any inconvenience, and to sacrifice time and leisure if the necessities of their case demand it. Act singly for their good and without the least consideration for self. Patients will not be slow in recognizing this, and they will give you credit for earnestness of purpose and feel grateful to you for your attentions. Their confidence in you will be strengthened, and when death invades and snatches away some loved member from their family circle, they will feel satisfied that all that devotion and skill could possibly do has been done to save the precious life.

To fellow-members of the profession be always considerate and generous—prompt to defend their professional reputation when thoughtlessly or maliciously assailed. Any attempt to improve your own position by detraction of a *confrère* would not only be unmanly and unprofessional, but would probably and justly fail. Always take a deep interest in the welfare of your country. Cultivate in yourselves and take every favorable opportunity to kindle in others a spirit of patriotism. Canada is a country of which her sons may well be proud. A not unimportant part of the greatest and most liberal empire the world has ever seen, with self-government secured to her, and with no

old world class distinctions among her people, she is at present the freest, the happiest and the most secure place on the surface of the globe in which to dwell. Grateful, indeed, ought every Canadian to be for all that Britain, the grand old mother country, has done for this Dominion, and steadfastly should they resist any attempt to weaken the bonds which now unite the two. In no part of the empire does there exist a deeper feeling of loyalty and devotion to our Empress Queen than in this Dominion of Canada. When the tidings reached us of the late attempt upon her life, we, her loyal subjects in Canada, could scarcely realize its possibility. That there could exist a brain to conceive and a hand to carry out a murderous design against one whom the civilized world acknowledges to be peerless as a sovereign, peerless as a mother, and peerless as a woman, was beyond our comprehension, and it was with a feeling of relief that we learned that the brain and hand were those of one who cannot be held accountable for his actions. Thankful, fervently and profoundly thankful, are we for Her Majesty's providential escape, and that a national calamity has been thus averted. We hold her in reverence as the supreme head of the state, we honor her as the wise and constitutional ruler, but we love her for those qualities of heart which have made her, in good old expressive Saxon, the *sweet-heart* of her people. God save the Queen.

In conclusion, gentlemen, with a full and abiding sense of the responsibilities which now devolve upou you—with a firm determination to do your duty faithfully and honorably and to merit the affection and esteem of your fellow-men—with a high resolve to conquer a prominent position, or at least not to prove laggards in your profession—with feelings of charity and kind commisseration for the lowly and distressed, and with hearts overflowing with tender sympathy for all who suffer sorrow, pain or disease—go forth from this hall, and enter hopefully and cheerfully upon the work of your life, and may the blessing of Heaven rest upon your labors. Fare-ye-well.

THE INDUCED CURRENT FOR THERAPEUTIC PURPOSES.

By L. E. FELTON, M.D., Potsdam, N.Y.

(Read before the Medico-Chirurgical Society of Montreal.)

Mr. President and Gentlemen,—It is not my purpose this evening to discuss the merits of electricity as a therapeutic agent, but to give you the results of some of my experiments and investigations as to the best methods of inducing a current for therapeutic purposes. In the published works on Medical Electricity, the physics of the induced current is almost required, much of the little that is published being unscientific and inapplicable to medical induction apparatus. The reason of this is, because the writers began their investigations with electro-therapeutics instead of electro-physics. It is only by a thorough knowledge of the laws of electricity that one can hope to be successful in electro-therapeutics, and the time is fast approaching when only investigations based upon laws will be considered reliable.

Electricity is a force correlative with heat, light and motion, and its laws are as firmly established and as well understood as those of light, heat and motion. When in dynamic form or current, a complete conducting circuit must be formed. In the galvanic cell the force is generated at the surface of the zinc plate. The direction in which this force is exerted is from zinc to carbon within the cell, and from carbon to zinc outside the cell. At the zinc plate it is called E. M. F., throughout the circuit tension, sometimes called intensity or potential. Tension overcomes the R. of the circuit; it is the direct result of E.M.F., and with a large R. is directly proportional to it.

The form of machine best suited for generating the induced current for medicine is an induction coil, which consists of a coil, a current regulator, a current interrupter, and a galvanic cell. A coil should be made up of a bundle of soft iron wires, surrounded by one or more coils of insulated copper wire. If one end of this wire be connected with the positive and the other with the negative pole of a cell, a part of the electricity which flows through the coil will be stored up in the core as magnetism;

if either end of the wire be disconnected from the cell, the magnetism will be instantly transformed again into a current of electricity in the surrounding coil, if it form a circuit. This current is of but momentary duration, but has the power of overcoming many hundred times the R. that the cell which generates it has, depending upon the E. M. F. The laws which I have already given with regard to cells are equally applicable to coils. Electro-motive force is located at the point or points where energy takes the form of electricity. In the induction coil, in the convolutions forming the coil, each convolution having its own E. M. F., so that the E. M. F. of a coil is in direct ratio with the number of turns of wire without regard to its size. The E. M. F. of the coil varies as the number of turns of wire, the E.M. F. of each turn varies as the amount of energy from which it is derived, and that is the energy stored up in the core as magnetism. The amount of magnetism induced in the core depends upon the quantity of current flowing through the primary or battery wire, and upon the number of turns of this wire. The battery current depends upon the E. M. F. of the cell, its internal resistance, and the resistance of the primary wire. Thus we are enabled, by combining a coil with a single cell, to develop a tension that would otherwise require a large number of cells. It is held by many electrologists of authority that a different quality of current and different therapeutic results are produced by different sized wires. Based upon this theory, coils are sometimes made up of half a dozen different sizes, each size supposed to produce its special therapeutic effect and applicable to special cases. A coil that has an E. M. F. sufficient to produce a tension that will overcome the resistance of the body and furnish a sufficient quantity of current for therapeutic purposes will do all that a dozen wires can do. With the galvanic current, the same quantity passing through a circuit in a given time will produce the same effects without regard to the kind of battery used. So with the electro-magnetic battery, the same quantity of current at each interruption and the same number of interruptions per second will produce the same effect without regard to size of wire or kind of machine. Now a coil can readily be

made of two wires, or even one, that will furnish a sufficient electro-motive force to give the desired quantity for therapeutic purposes, and with a proper regulator any desired quantity can be obtained. Where several sizes of wire are used, it makes a complicated affair for the physician, requires a larger number of connections to get out of order, and makes it more mysterious for the inexperienced.

The foregoing view is based upon an incorrect application of theory, and is opposed to Ohm's law. The only difference being a difference in the R. of the wire. With an external resistance *nil*, 100 turns of coarse wire would give a quantity only as much greater than 100 turns of fine wire, as the difference in the R. of the two wires; but with a great R. like the body, this difference cannot be considered. Writers tell you that coarse wire like large cells, gives a greater quantity of E., and that fine wire, like small cells, gives a greater intensity; that the one is applicable to one class of affections, and the other to another class. The mistake is due to a consideration of cells and coils with a small R. and applying the results to a large R. Intensity, as I have already told you, with a large R. is directly as the E. M. F. Q. is directly as the E. M. F., hence it must be directly as the intensity or tension, so that when we increase tension we necessarily increase quantity. The reason why coarse wire produces a milder effect is not because it has greater quantity and less tension, but because there being a less number of turns, the E. M. F. is less, the tension less, and the quantity less; the same number of turns of fine wire would produce precisely the same result.

In constructing a battery for any special purpose, it is necessary to know the resistance of the circuit and quantity required. The R. of the body varies so greatly that a battery for general therapeutic purposes must be made to furnish an E. M. F. that will overcome the greatest possible R., and then be supplied with suitable appliance to vary the E. M. F. and the R., and for the Q.

It is of the utmost importance that the strength of the current can be accurately regulated by the operator. Nearly all of the

current regulators are based upon the following law: Where there are two or more circuits surrounding a magnetized core, a current will be induced in each inversely as the resistance. If a copper tube surrounds the core, and a great resistance (like a part of the body) be included in the circuit of one of these coils, the current would nearly all be induced in the copper tube. If this tube be arranged so that it will side on the core and a portion of the core be uncovered, a current will be induced in the coil surrounding that part of the core that has been uncovered by the tube. The tubes are generally placed between the core and the primary or battery coil, or between the primary and secondary coils. The last is objectionable, because the primary wire should be wound as close to the core as possible so as to magnetize the core as highly as possible. A compact coil cannot be made with a tube sliding within it. I overcome these objections by sliding a copper tube over the whole coil. The current is regulated to a nicety. The tube should not be made of brass, as the resistance is too great. The method of sliding the secondary coil over the primary is objectionable on account of the connections becoming broken while the coil is being moved, the result being to give the full force of the current induced in the primary wire, which, when applied to nervous patients, particularly if upon the head, is very pernicious. I would call your attention to batteries that have ornamental ferrules of brass or copper on each end of the coil; in some instances half of the coil being covered. The current is induced in these ornaments instead of in the wire, and the strength very much lessened.

To what are the therapeutic effects of electricity due? To polarization and molecular change, or to simple shock? That they are due to the former: that the current produces molecular change in the tissues that stimulates action there can be hardly a doubt. An evidence of this is that the constant current, from which there are no shocks, produces the same effects in even a more marked degree than the induced current. From the experiments of Prof. Blaserna, he has determined that the duration of the induced current at each interruption is about 1-1000 of a second. The chemical effects of a current of this

duration must be very minute, but would be in a given length of time just in proportion to the number of interruptions in that time; that is, 1000 interruptions per second would produce 1000 times the chemical results that one would. Now if the therapeutic effects are due rather to the chemical effects of the current than to the simple shock, as I am led to believe by the results of the galvanic current as compared with the induced and the induced current with rapid vibrations compared with slow, we have reason to believe that the more rapid the interruptions the better the therapeutic results. The interrupters on nearly all of the induction coils are too clumsy to be called vibrators, but should rather be called oscillators. The springs are large and long, supporting on the free end a heavy iron armature and a large metal disk for the platinum. Such an interruptor can neither make rapid nor regular interruptions. A vibrator to make rapid interruptions must be constructed in accordance with the laws of vibration. These laws will be found fully discussed in works on acoustics. The vibrator must be made upon precisely the same plan as the organ reed which gives the highest pitch, as pitch depends entirely upon the number of vibrations in a given time. Temper, length and thickness, as well as uniformity, are important factors. It is highly important that no extra weight be put upon the free end, such as a heavy armature; the armature should be no thicker than the vibrator itself. The size of the vibrator depends upon the motive power that produces the vibrations, viz., the magnetism. From a long series of experiments I find that copper, zinc and silver, or copper and zinc, melted together, gives the best temper for rapid vibration. The tempering must be done by means of rolls, and it requires considerable skill to get the proper temper. I make the vibrator 1 inch long and about $\frac{1}{8}$ inch wide. On the free end I solder a piece of what is known as artists' tin-type, about 1-1000 inch thick, in such a manner that it makes an extension of the vibrator instead of thickening it; this is only about $\frac{1}{4}$ in. square, and forms the soft armature. A piece of platinum foil, about same size, is soldered on surface of vibrator, near middle, for contact with adjusting screw. The vibrations from this in-

terruptor are very rapid, as shown by the pitch and quality of current. I am conducting a series of experiments to determine the number of vibrations that can be produced per second, the result of which will be given at some future time.

The idea advanced by many writers that slow interruptions of the induced current give better therapeutic results than rapid is wholly without foundation, and is not applicable to any case, except it be one in which you wish to produce as much pain as possible. It is, however, an acknowledged fact that slow interruptions of the galvanic current produce constrictions of paralyzed muscles when the induced fails. The reason for this seems to me very clear. Supposing the interruptions to be 1 a second with the induced current, we would have at each interruption a current lasting about 1-1000 of a second, and in another second another current of like duration. But with the galvanic battery, when the circuit is closed, the current passes until it is open again, and if of the same E. M. F. and R., we have several hundred times the quantity passing at each interruption as with the induced, and so long as electricity is just the same as long as it flows in the one case as in the other, it is safe to assume that the difference in therapeutic results is due to the difference in the quantity that flows at each interruption. Then it is reasonable to suppose that with a vibrator that will produce a large number of interruptions per second we should obtain results nearer like those of the galvanic current; this I have found to be the case, as I have repeatedly demonstrated in my experiments. In doing this, I make my slow interruptions in the induced circuit by removing the electrode, or using an interrupting handle.

The object of slow interruptions is to give the muscles time to contract and relax. With rapid interruptions there would be tonic contraction of the muscle. A shock sufficiently strong to produce a contraction is very painful, while a rapid succession of shocks will contract a muscle with little or no pain. The intervals of contraction and relaxation are far better made by the operator removing and applying the electrode, than by any automatic arrangement.

The plan of a vibrator is shown in Fig. 1; *e* is vibrator, having a soft iron armature *h* and platinum connection *f*; soldered to it *a* is adjusting screw having platinum point *g* for contact with *f*. When contact is made between adjusting screw and vibrator a current of electricity will "flow" from carbon through adjusting screw, which is connected with it and vibrator, to inner end of coil which is soldered to *d*, and through coil *k* to zinc. This current magnetizes the bundle of wires *l* and soft iron bar *i*; *i* attracts armature *h*, drawing vibrator away from adjusting screw, thus breaking the circuit and demagnetizing the wires and rod, which releases the vibrator, the elasticity of which causes it to fly back in contact with adjusting screw, thus breaking the circuit and demagnetizing the wires and rod, which releases the vibrator, the elasticity of which causes it to fly back in contact with adjusting screw, completing the circuit again. At each interruption we have a current induced, lasting according to the researches of Prof. Blaserna, about 1-1000 sec.

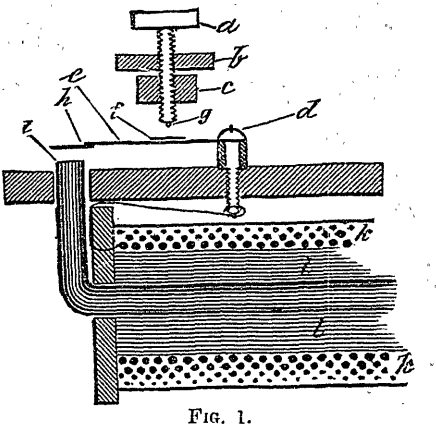


FIG. 1.

The next important part for consideration is the battery cell. The cell which gives the greatest E. M. F. is the Bichromate; the elements are Zinc and Carbon, and the Battery Fluid is a solution of Bichromate Potash and Sulpuric Acid.

The E. M. F. of this cell is a trifle over two Volts., and the internal resistance very much less than any other cell, being less than half an OHM. Hence it is best fitted for a Portable Battery, as a small cell may be used without materially increasing the resistance. There are, however, some decided disadvantages in the form usually employed—the Grenet. The Carbon plates are attached to a brass connection within the cell; the fluid very soon finds its way between them and oxydizes the brass, and breaks the circuit, and the current ceases. The same trouble occurs where the rod is screwed into the Zinc Plate, and also at the joint in the rod. Another disadvantage, the Zinc Plate is carried in the cell and is subject to the action of the fluid when carried. The plate being seldom cleaned and amalgamated, becomes coated with chrome alum, and produces an unsteady current.

I have devised a cell which overcomes all of these objections. The cell or jar *a* [*Fig.* 2] is hard rubber, all sides permanently closed when vulcanized. The negative element is a rod of carbon ¾ in. in diameter, into one end of which is soldered a short piece of metal *e* for better con-

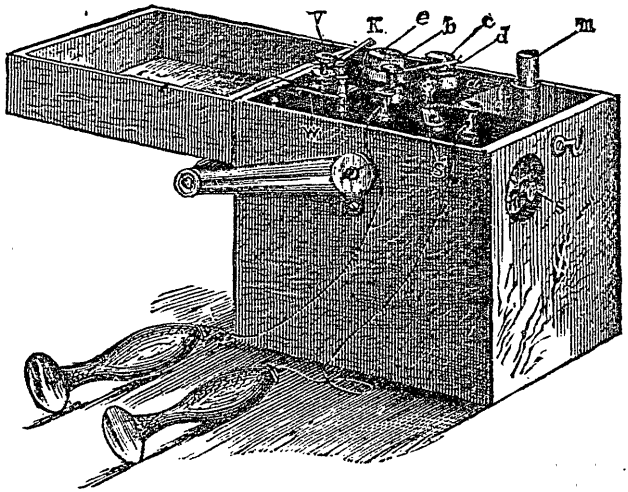


FIG. 2.

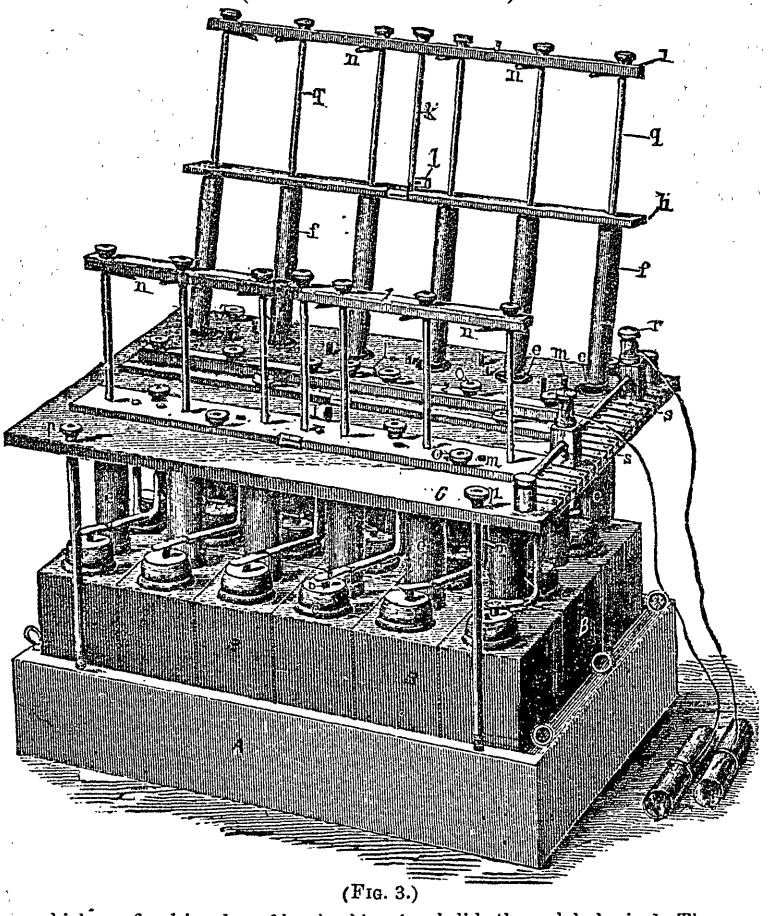
tact. Upon this end is fitted a hard rubber ferrule *b* secured by rubber cement so perfectly that no fluid can find its way through. The end of the ferrule is closed by a hard rubber disk, having a hole for *e*, secured in same manner. Upon lower end of ferrule is a screw fitted to a hole in one end of cell *a* and screwed in with cement. The carbon reaches nearly to bottom of cell, while end with ferrule projects outside, as shown in [*Fig.* 2.] A hard rubber neck is screwed into another hole in top and closed with stopper *c*. The connections are thus made outside of cell, so that there is no possibility of connection corroding or cell leaking whether upright or not. The cell is carried full of fluid; when used the stopper is removed, the zinc introduced and connectians made with it. The zinc can be kept clean and amalgamated without trouble, and is not wearing except when in use.

I have adapted this cell to the galvanic battery. (*Fig.* 3.)

The cells B are of hard rubber, closed on all sides by vulcanizing. The negative element is a rod of carbon $\frac{3}{4}$ inch in diameter, having a piece of metal *b* soldered into one end for connection. This end is filled with paraffine and fitted to a hard rubber ferule *c*, which is secured by cement and screwed into top of cell. By this means connection with carbon is made outside the cell and is protected from corrosion by fluid. A tube of hard rubber *e* is screwed into top of cell, into which the zinc elements are drawn when the battery is not in use, and through which the cells are filled and emptied. The ends of the tubes pass into holes in a platform of hard rubber *C*, shown in section 3 of engraving. These holes are covered by strips of rubber *h*.

The positive elements are rods of rolled zinc *f* supported by metal rods *q*,

(CASE REMOVED IN ENGRAVING.)



(FIG. 3.)

which are fixed in a bar of hard rubber *i* and slide through holes in *h*. They are arranged in sections of six each, and are supported out of fluid by rod *k*, which is notched for spring *l*. Connection with carbons and zincs is made by means of the angular rods *m*, which are each provided with a spring *a* firmly pressing upon metal *b*. The rod is firmly secured in the platform, projecting through it for contact with springs *n*. Each rod is connected by a wire to a corresponding metal clip *s*, which is numbered.

The binding posts for the cords, *r r*, which are in contact with the clips, slide upon a rod, so that any desired cell can be used first and the number increased from either way, one at a time, without breaking the circuit, until the desired number is obtained.

To Fill the Battery—Remove sections of zincs, as shown in engraving, and fill with funnel.

To Empty Cells—Lift off platform *C*, when the cells can be removed from tray *A*.

To Start Battery—Press upon spring *l*, when the section of zincs will slide into fluid; slide posts *r r* upon the clips *s s*, corresponding with the cell that you desire to commence with; then increase the number at pleasure.

To Clean and Amalgamate the Zincs it is simply necessary to remove a section, as shown in engraving. First section is supported in tubes; second section is immersed; third section removed.

The Advantages presented in this battery are: The cells are absolutely tight, so that the fluid can neither leak nor spill, making it perfectly portable. The connections are made outside the cell, so that they do not corrode from contact with fluid. The carbons can not be broken. The zincs can be cleaned and amalgamated in a few minutes. Any section of zincs can be used at a time. Any particular cell can be brought into the circuit at a time. It is but a moment's work to start it. It is perfectly clean. It is particularly adapted for electrolysis.

SOME CASES IN PRACTICE.

By JAMES DORLAND, M.D., Milwaukee, Wis.

No. 1.—*Suspended Animation in a Newly-born Child.*

Feb. 22nd, 1882, was called to attend Mrs. C. in confinement with her first child. Everything progressed favorably, and at 6.55 A.M. the head passed the perineum. Upon passing my finger in, found the cord once around its neck and pulsating vigorously. Attempted to put it over the head, but did not succeed, so left it alone, watching the pulsations. The child gave one convulsive movement and was then still. A minute after, the pulsations getting weaker, I again tried and succeeded in getting it over the head; it was still pulsating, and a pain coming on, the shoulders were born. A second or two later, found the pulsations in the cord had ceased; cut it at once and delivered the child. No hemorrhage from the cord, and no effort whatever at inspiration; there was a feeble fluttering at the heart. Sprinkled it with cold water, then hot, slapped it, and used every method known to me, including mouth to mouth inflation and taking the child and carrying it rapidly back and forward through the air, and allowing the head to hang down for a few seconds

at a time. I also applied hot water cloths constantly, with alcohol, but for one hour could not get even a gasp, although the heart still beat feebly. Knowing that the air I forced into the lungs was devoid of oxygen, I bethought me it would be a good idea to use pure air, and thus give the lungs their proper stimuli. Getting the nurse to hold its nose, I put the nozzle of an ordinary syringe in its mouth, and, compressing the lips around it, forced in air. After repeating this three or four times at intervals of from four or five seconds, I had the satisfaction of seeing the child gasp, and by using it judiciously, at the same time keeping up heat artificially, at the end of two hours and five minutes we had the pleasure of observing regular respirations in the child. It had talipes calcaneus, but otherwise was perfectly healthy. It did well until on the morning of the 24th I was called hurriedly, and found its heart had ceased to beat, but that it was still breathing. Tried every method in my power, but could not revive it. This case proves what we can sometimes accomplish by perseverance, and that inflation by the mouth to mouth method cannot compare with the introduction of pure air. I have never seen that plan spoken of before, and from this time shall use it as a first and not a last resort. The family, as well as myself, feel perfectly satisfied that without the syringe the child would not have been restored.

No 2.—*Nerve-stretching for Sciatica.*

John S., aged 60, in November, 1879, contracted a cold, and the following day complained of intense pain along the course of the sciatic nerve, from its point of exit down almost to the knee. By chance I saw him that day, and ordered an opiate, with warm fomentations. He did not again consult me at that time, but I learned that he first consulted one, then another, but did not improve. He also patronized most of the travelling quacks that came to the city.

Jan. 1*st*, 1881.—I was asked to see him again, and upon examination, found him in the following condition: Able to walk, but only a short distance at a time; then complained of pains all down the course of the nerve, severe at the knee, but worst

at the dorsum of the foot, and of a peculiar stinging character. The muscles were very much atrophied, and the skin dry and harsh; his general health poor. Pressure at the exit of the nerve, and at several points in its course, produced severe pain. He had been treated in all manner of ways—the actual cautery, electricity, baths, tonics, &c.—but without the least apparent benefit. I told him there was a chance to cure him by stretching the nerve. He consented to a trial, but the day selected his sister carried him off and put him under the charge of a quack, who guaranteed a cure for $2.

On the 12th he sent for me to come and operate, which I did, Drs. Copeland and Robbins assisting. An Esmarch's bandage was put on, and the constriction applied as high up as possible. The operation was performed at the upper third of the thigh, using the biceps for my guide, and commencing my incision at the lower border of the glutens maximus muscle, making it six inches long. Dissecting carefully down, I had no difficulty in finding the nerve, which was divided high up. The nerve sheath was very thin, and at that point no apparent evidence of inflammation. I took up one branch with my finger and pulled on it until I felt something give way, which I supposed to be adhesions. Then I stretched the other, but did not feel any such sensation. I forgot to mention that before stretching I removed the constriction. The sheath was carefully replaced, a rubber drainage-tube put in, and the wound closed with four silver sutures and the interspaces supported with adhesive plaster. Not a drop of blood was lost until the sutures were put in, when about a teaspoonful came away. I finished the dressing with a thick roll of cotton, and held it in place by a few turns of a roller. Gave ¼ gr. morphia sulp. hypodermically.

Jan. 13th.—Pulse 108; temperature 100°; tongue coated, but moist. Wound closed externally by first intention. Slight discharge of bloody serum from the drainage-tube; by gentle compression, a little more came away. Had three small chills about four hours apart. Urine high-colored, but no albumen. Ordered quinine sulph. gr. iii every four hours. Syringed it out with a 3 per cent. solution of carbolic acid, and applied cotton

dressing again, with a little more compression. 14*th.*—Pulse and temperature about the same, but had no chills during the past 24 hours. Had felt no pain since the operation. I stretched the leg and flexed it on the thigh, and that on the abdomen. It produced very little pain. Ordered cinch. sulph., with mineral acids and bark, and to have electricity applied daily, together with friction of the limb.

From this time forward he progressed rapidly, with occasional twitches of pain, which, as the muscles regained their tone, grew less frequent, until, at the end of three months, he felt perfectly well, the leg being at that time the same size as its fellow. He has passed through the winter so far without any trouble whatever, and can be regarded as perfectly cured. He attends to his duties as road commissioner, which post he has now filled nine months, and it keeps him on his feet the most of the day. We did not get the specific effect from the stretching, for he had some twinges after; but I think it so changed the nutrition of the part, and broke up the adhesions, that electricity, with tonics, which had been tried persistently before without the least benefit, completed the cure.

No. 3.—*Foreign substance producing symptoms of Gall Stone.*

Dec. 11th, 1881, was called to see Mrs. N., aged 55, who had been suffering intense paroxysms of pain for the past six hours. A homœopath had been called in, but could afford no relief or give any satisfactory idea what was the trouble. The pain began at the epigastrium, and gradually grew worse. Upon examination, I found the pulse slightly accelerated, temperature normal, eyes becoming jaundiced, and an anxious expression of the face. Had vomited a great deal. Over the duodenum, and about the course of the common duct, was a place about 2½ inches long by 1 inch wide that was exceedingly sensitive to the touch, and from which all the pain seemed to emanate. No peritonitis, but slight tenderness, due to the pains and sympathy. Diagnosed it as gall-stone colic. Gave a hypodermic injection of morphia and antispasmodics, and ordered large linseed poultices over the spot.

Dec. 12*th.*—Patient had been easier since my visit; the paroxysms not so frequent; still great tenderness on pressure; the eyes deeper jaundiced, and the urine loaded with biliary acids. In addition, ordered saline cathartics, and left positive orders to keep everything that passed for inspection. She gradually improved until, on the 15th, she was feeling quite well; eyes clearing up, and urine a better color. Pain all gone, only the tender spot remaining on pressure. Felt sure the stone had passed, but failed to find it.

Jan. 19*th.*—Was called again, and found her in much the same condition as before. Ordered the same treatment. The eyes did not get quite so yellow, nor was the urine so heavily loaded. The pain began in the same spot. After her stomach had settled, gave a large dose of oil, as I felt sure the stone had lodged in the duodenum, part of which she retained. The following day she felt quite well, and upon examining the fæces I found a piece of walnut about $\frac{3}{4}$ of an inch long, nearly $\frac{1}{2}$ wide, and $\frac{1}{4}$ thick at the largest end, tapering to a thin point at the other. It gave evidence of having been in the alimentary canal for some time. Upon being questioned, she stated that she had not been feeling well for over a month before her first attack, and laid it to eating head-cheese, a food of doubtful composition. There is very little doubt but at that time the foreign substance was introduced, and that the sharp point of it caught at the orifice of the common duct. Since that time she has been in perfect health.

No. 4.—*Ununited Fracture of the Humerus.*

Chris. B., aged 20, in the spring of 1879, while riding on a car used in drawing stone out of a quarry, the cable broke and allowed it to descend with frightful velocity; he was thrown off, and suffered a fracture of the humerus at the juncture of the lower with the middle third. I did not see him until Jan. 3rd, 1880, about nine months after the accident, when I obtained the following history: The homœopathic doctors that were called in said it was a simple fracture, and treated it accordingly for nineteen weeks; from that time until he came under my care

he had been to various surgeons, one of whom drove two ivory pegs in to create inflammation, which they did, but did not produce union, and were still in when I saw the arm.

He informed me that shortly after his fall he discovered that the radial artery did not pulsate, and when I examined him, no beating could be felt; but no doubt a small amount of blood still passed through. The forearm was at right angles to the arm, and firm fibrous union had taken place at the joint. The thumb was flexed on the hand, and the fingers flexed over the thumb, and held very firmly in that position. The hand was also flexed to its fullest extent towards the forearm. There was slight shortening of the arm. All the muscles from the shoulder down were very much atrophied, especially the interossei. The fingers could only be slightly straightened, the thumb still less, while it was very painful at the wrist to attempt to extend the hand. At the seat of fracture very little provisional callus was thrown out, and although the fracture was very plain, no crepitus could be made out, even with considerable pressure, when rubbing the ends together. I decided that union did not take place owing to some substance being between the ends of the bone, and thought most likely it was a piece of muscle. I told him it would have to be cut into and the ends wired together, which was done Jan. 9th, 1880, Drs. Senn and Bading assisting. The operation was performed bloodlessly, and an incision about four inches long made, commencing just below the insertion of the Deltoid, taking care to avoid the musculo-spiral nerve and superior profunda artery. No difficulty was experienced in reaching the anterior and lower fragment of bone, ripping up the periosteum, and sawing off the end, which was found rounded off to a sharp point, and quite smooth. A hole was then drilled through, and some silver wire inserted and held out of the way. The posterior fragment was much more troublesome to get at, but when raised, we found that it was a portion of the Brachialis Anticus muscle that prevented union. Upon loosening it from the bone, pulsation immediately returned in the radial artery, showing that the flow of blood had been stopped by the contraction of the muscles. The point of the fragment was in much the same conditions as

the other. The periosteum was opened, and as small a piece as possible sawn off, a hole drilled through, and the two ends wired as firmly as possible together. The arm was then put up in a posterior splint, coming well around, and the patient kept in bed as quiet as possible. Two days afterwards he had a chill, followed by the symptoms of diphtheria, which soon developed into a case of medium severity. He had not been exposed, and the only way to account for it was that early in the morning I had performed tracheotomy on a child suffering from diphtheria, and had not time to change my clothes before operating on him. I put him on appropriate treatment, and in about a week he was fully recovered. Then I put him on bitter tonics and cod liver oil for some time, until his general health was fully up to a normal standard.

At the end of seven weeks he was able to come to the office, when electricity was applied daily to the muscles, and kept up until the end of the treatment. Union took place slowly, and was stimulated by driving in two nickel-plated nails, one in each end. They did excellent service. At the end of six months union had taken place, but it was not firm, and easily bent. It was now removed from the sling, and the motion produced irritation enough, so that at the end of another month firm union had taken place. Passive motion was used upon all the joints, and as the arm grew firmer, more force was applied. The elbow yielded considerably, as did the wrist, but the latter could not retain its extended position, and neither it nor the forefinger could ever be brought to a normal condition. He said his hand was so flexed shortly after the accident, but whether it was due to injury to the musculo-spiral at the time of accident, or gradual atrophy, I am unwilling to say, but I believe the latter. Sensation was not impaired, but owing to the feeble circulation the temperature was much lower than its fellow. He can cut his food and carry it to his mouth, chop wood, and has a very useful arm, with the muscles fairly developed.

This case is interesting from a medico-legal point. No doubt the muscle was between the ends of the bones immediately after the fracture, and I do not believe there could have been true bony

crepitus at that time, and the absence of pulsation at the wrist should have made them search for the cause, and, if possible, remove it, thereby saving the boy a great amount of trouble and deformity. The case is now before the courts, but it is the company that is sued, not the surgeons.

QUARTERLY RETROSPECT OF SURGERY.

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(*Continued from March Number, page* 479.)

Gastrostomy and Œsophagostomy.—The operation of gastrostomy was first performed by Sédillot in 1849. Since then this operation has been practised a large number of times in England, America, and Germany. The first successful case occurred in the practice of M. Verneuil at the Hôpital de la Pitié, Paris, in 1876. The operation was performed for stricture of the œsophagus, in a boy 17 years of age, caused by swallowing a solution of potash. The previous operations had all been undertaken for malignant disease.

At a meeting of the Clinical Society of London in October last, Mr. Reeves read a paper on "Two cases of Malignant Stricture of the Œsophagus, in which Gastrostomy was performed, with a special reference to Œsophagostomy in narrowing of this tube." He said, in these two cases, he had performed gastrostomy in deference to the wishes of his colleagues, and went on to describe how he should act in suitable cases of stricture of the œsophagus. He said that malignant obstruction was most common in the upper part of the tube, and in such cases he considered œsophagostomy the preferable operation. Even when the stricture was low down, œsophagostomy is indicated as a preliminary and exploratory operation; and, if a tube cannot be passed through the stricture, gastrostomy should be performed. Œsophagostomy is a much safer operation than gastrostomy; never, in fact, having been fatal. Mr. Reeves said it should be performed on the left side of the neck

by making an incision from half an inch above the episternal notch to the level of the upper border of the thyroid cartilage. The Surgeon should stand on the left side of the patient. If possible, a sound should be passed previous to the operation; and after the œsophagus is opened, a tube with a funnel-shaped end should be passed and tied in place, and nourishment administered through it as soon as the effects of the anæsthetic have passed off. The operation should be undertaken early, before the obstruction is complete, and before the patient's strength is exhausted.—(*Lancet Report.*)

At the adjourned discussion on November 11th, Mr. Golding Bird presented brief abstracts of five cases of cancer of the œsophagus, in four of which gastrostomy was performed. In the fifth, the operation had to be abandoned owing to the occurence of œsophageal hemorrhage. He pointed out that gastrostomy was only a palliative operation and could not be judged of by bare statistics. One of his cases, a man aged 66, had lived five months, but symptoms had only existed two months before operation. In the others the histories were much longer. He said gastrostomy of itself was not a fatal operation, but that it was resorted to too late, and that the earlier operation was resorted to, the better the result. He believed in those cases which presented themselves for operation late in the disease, the stomach should be opened at the time of operation and nourishment given at once. He was distinctly opposed to œsophagostomy as a substitute. In four out of his five cases œsophagostomy would have been useless. Dilatation of a cancerous stricture high up might be fairly tried, but when in the chest it was his opinion that dilatation was more dangerous than gastrostomy itself. Mr. Durham advocated, where possible, feeding the patient through an elastic catheter, passed into the stomach through the mouth. The catheter should only be left in three or four days, and another then introduced. He did not think that Dr. Krishaber's method of passing the catheter through the nose so good, because more disagreeable. Dr. Krishaber, at the International Congress, stated that in œsophageal stricture the catheter could remain in for an indefinite period. Dr. Douglass Powell warned the users

of catheters against the dangers of the passage of instruments from ulceration. Dr. Andrew Clarke, and the surgeons who subsequently spoke, almost all advocated the use of the catheter as long as possible.—(*Abstract of Report in British Medical Journal.*)

The prevailing opinion seemed to be that catheters should be used where possible, in stricture, to dilate it, and to feed the patient; also, the passage of a catheter in a cancerous stricture prevented the constant irritation of the stricture by food, and so temporarily arrested the growth. In cases where the stricture was low down it is probable catheterism would not be successful. Where the cancerous stricture was high up and a catheter could not be passed, it is probable œsophagostomy might prove a valuable operation; but where the cancer was low down and a catheter failed to pass, gastrostomy is indicated. It was the general opinion that the operation should be performed early, but that as a rule the patient would not consent till too late. Dr. Andrew Clarke brought out the fact that the passage of a catheter required a great deal of patience, and that if the operator persevered in his efforts to pass it, he was often in the end successful.

With regard to the operation of gastrostomy, several of the speakers advised, first, stitching of the stomach to the abdominal wall, around the opening, by two circles of sutures an inch apart, and leaving it thus for four or five days before the stomach was opened.

Dr. Carl Langenbuch (*Berlin Klin. Woch.*) regards the immediate opening of the stomach as unsafe. If there be urgency he would suggest the use of an aspirator syringe and injection of liquid food in this manner. Langenbuch thinks that as soon as the difficulties of swallowing are at all pronounced the first part of the operation should be undertaken, and that the surgeon should not wait till the stricture is impermeable. With regard to the second part, he recommends a very small opening into the stomach, so small indeed that a certain amount of force is required to get in the tube. The tube should be provided with a stop-cock, and so all escape is prevented. Before opening the

stomach it should be fixed with a sharp hook to prevent puncturing the posterior wall.—(*Med. Times and Gazette.*)

Dr. P. Kraske, in the *Centralblatt für Chirurgie*, warns the profession against the danger of stitching the stomach to the wall of the abdomen some days before opening it, as the stomach contents are very liable to escape through the stitch punctures in the gastric walls. This occurs especially if there is any degree of tension. He reports a case where the escaped matter through the stitch punctures caused a fatal peritonitis. He therefore advocates immediate opening. Dr. Kraske thinks that this danger will have to be taken into account in considering the advisability of the first part of the operation being performed early in the case, as suggested by Langenbuch.

Dr. T. F. Prewitt, in a paper on gastrostomy, published in the *St. Louis Courier of Medicine*, gives a table of fifty-nine cases: forty were malignant, twelve cicatricial, three syphilitic, and in four nature of stricture not given. In the cases operated on for malignant stricture the patients lived fourteen days to six months, and one patient is still living. In the cicatricial variety six recovered, as also one where the stricture was of syphilitic origin. Peritonitis existed in only seven of the cases. Exhaustion alone is assigned as the cause of death in the large proportion of cases.

Mr. A. F. McGill, of the Leeds School of Medicine, reports in the *Lancet* for Dec. 3rd, 1881, two cases of gastrostomy. In both cases the operation was performed for malignant stricture of the œsophagus, about the level of the cricoid cartilage. In the first case the wall of the abdomen was incised and the stomach sewn to the edge of the wound by thirteen silver wire sutures; then the opening was made into the stomach four days after, the patient in the meantime having been fed with Slinger's nutrient suppositories. Four months after the operation the patient was still alive. In the second case the patient died on the seventh day from exhaustion.

Dupuytren's Contraction of the Fingers.—Dr. Myrtle, in the *British Medical Journal* of Dec. 3rd, 1881, contributes an article on the above affection, in which he denies its connection

with gout for the following reasons :—1. It is never met with in women, and they are quite as much afflicted with gout as men. 2. Many of the worst cases he has seen (his own among them) have not been gouty themselves, nor have they ever had a gouty progenitor. 3. Gouty remedies have no influence over this affection. 4. That the very mode of dealing successfully with contracted finger, by division, with subsequent mechanical extension, is a plan which surgeons would not readily adopt in cases of enlargement, stiffening and contraction from gouty deposit. The general ignorance of the profession with regard to the pathological changes which cause this contraction appears to Dr. Myrtle incomprehensible, especially since the various writers on this disease have so clearly demonstrated that the contraction is due entirely to changes which have taken place in the bands of fascia of the fingers and palm ; that the tendons with their sheaths, the joints with their covering and ligaments, are not implicated. He describes two forms of contracted fingers :—The one, traumatic, traceable to some local injury. The other, idiopathic, generally met with after middle life ; one or more fingers may be affected, the third most commonly, and the forefinger and thumb being rarely implicated. Dr. Myrtle says there is only one method of treatment, viz., subcutaneous division of constricted bands with subsequent mechanical extension, as recommended by Mr. Wm. Adams. Every fibre of the tightened band must be divided separately.

Mr. H. A. Reeves (*Brit. Med. Jour.*, Dec. 31, 1881), cannot agree with Dr. Myrtle that gout and rheumatism are not frequent causes, and he differs altogether from the statement of Dr. Myrtle that it is never met with in women. He can clearly recall five cases, and is sure he has seen at least seven or eight in women. Mr. Reeves gives the causes as follows : 1, rheumatic and gouty diathesis ; 2, injury ; 3, occupation ; 4, heredity ; 5, neurosis. Occupation may claim a large percentage of cases, as it is not uncommon in boatmen, coachmen, sailors, bootmakers, writers, and even those who have for years carried a walking stick and borne their weight on it. Dr. Myrtle believes the contraction due to a hyperplasia of the fascia, while Mr. Reeves considers it to be inflammatory.

Mr. Southam, of Manchester, has also observed it frequently in women, and considers it commonly connected with a gouty diathesis.

Mr. Wm. Adams states (*Brit. Med. Jour.*, Jan. 21, 1882), that when he published his work on "Dupuytren's Contraction of the Fingers" in 1879, he had never seen a case in women, and since that time only one case has come under his observation, that of a lady aged 66, in whom both hands were affected. He says that the affection may be of more freqnent occurrence in females than has been supposed. Many cases have been sent to him as cases of Dupuytren's contraction which he excluded from that class, there being no puckering of the skin of palm or prominent fascial bands, but as a rule the fingers were contracted, because they were bent at the phalangeal articulations and could not be straightened. I have seen one case of genuine Dupuytren's contraction of the fingers in a woman aged 52, who had a decidedly gouty diathesis. The little finger and ring finger of the left hand were affected, and there was considerable puckering of the skin. I have seen but few cases at the Montreal General Hospital Out-patient department, and these all in gouty patients. I am inclined to believe that it is not a common affection in this country.

Treatment of Fissure of the Anus.—Dr. Mascarel proposes the following treatment, which he has used with much success in the case of those patients who fear the radical cure of fissure by forcible dilatation:—1. An enema of warm water, to which a large spoonful of glycerine has been added, is ordered to be given daily. 2. After each motion, a small pledget of lint, saturated with the following ointment, is to be introduced into the anus: ℞ Glycerine, 30 grains; oil of sweet almonds, 30 grains; brown ointment (onguent de la mère), 60 grms. 3. After introducing the lint, care must be taken to smear the ointment well around the outside of the anus. 4. If there is great constipation, five centigrammes of powdered belladonna root should be given every night. In eight cases out of ten, fissure of the anus will be cured after three weeks or a month of this treatment. (*Le Progrès Médical*, July, 1881, quoted in *Practitioner*, Dec., 1881.)

I have found, where the patient will not consent to operative measures, or the pain of touching the fissure with a point of nitrate of silver, the application of an ointment of calomel gr. iv, opium and ext. of belladonna each two grains, to a drachm of simple ointment, as recommended by Mr. Allingham, prove often curative. The bowels, of course, should be kept open.

Treatment of Prolapsus Ani by Hypodermic Injections of Ergotine.—Dr. Vidal has treated successfully three long-standing cases of prolapsus ani in adults by means of injection of ergotine, a cure being effected in a few weeks. The author therefore recommends that this method should be adopted in similar cases. The method employed is to inject, by means of a Pravaz syringe, 15 to 20 drops of a solution consisting of one part of Bonjean's ergotine in five parts of cherry laurel water, every two or three days, through the anus, either into the sphincter or into the prolapsed portion of intestine. Severe burning pain follows the injection, tenesmus, lasting several hours, in many cases cramp in the neck of the bladder, and retention of urine for eight to ten hours. The author has not met with inflammation, abscess, or toxic symptoms in any of his cases. (*Der Praktische Artz*, in Nov. *Practitioner*.) Judging from the immediate effects of the operation, I think it would be hard, in this country at least, to prevail on the patient's submitting to a second injection; besides, it offers no advantages over Dr. Van Buren's method of treatment by actual cautery.

Hospital Reports.

MEDICAL AND SURGICAL CASES OCCURRING IN THE PRACTICE OF THE MONTREAL GENERAL HOSPITAL.

SURGICAL CASES UNDER DR. RODDICK.

I.—*Gunshot Wound of Foot.* (Reported by Dr. HENDERSON.)

On Dec. 3rd, 1881, Willie C., a well-nourished lad aged 15 years, while walking along with a man carrying a shot-gun with the muzzle directed towards the ground, it was discharged accidentally, the lad receiving the whole of the charge in his right foot, entering on its outer side about one inch in front of the

malleolus, leaving a large circular, gaping wound one inch and a half in diameter; the charge then followed a straight course across the foot to its inner side, passing out just in front of the tubercle of the scaphoid bone. The wound of exit was much smaller than that of entrance, allowing only the introduction of the little finger, while three fingers could be passed into the other with ease. By means of the fingers it was found that a portion of the cuboid and all three cuneiform bones were very much shattered. The ankle joint and the bones of the metatarsus appeared to be uninjured, except the bases of the 4th and 5th metatarsal bones, which are both exposed. The flexor and extensor tendons of the foot were also uninjured. Bleeding was very free at time of accident, but very slight after removal to hospital. From the interior of the wound a quantity of *débris*, consisting of fragments of bone, blood-clots, shot, paper, shreds of wool and dirt, were removed with the finger; the wound was then thoroughly washed out with a one-to-forty solution of carbolic acid, and after passing strips of lint soaked in the same solution through the wound to serve for drainage, Lister's antiseptic dressings were applied. There was no swelling or deformity of the foot, and the motion of the ankle joint was free and painless.

Dec. 12th.—Wound was dressed daily up to the 9th instant, and then undisturbed for three days. To-day the condition is very satisfactory. There is no swelling or redness, and little or no pain complained of; the articular surfaces of the 4th and 5th metatarsal bones have come away, and a considerable quantity of shot, wool and fragments of bone again removed. The discharge is free, and quite devoid of offensive odor. Temperature, with the exception of the first two nights, has not been above 99°. An ordinary drainage-tube has been passed through the wound lately, instead of the strips of lint at first used.

Jan. 2nd, '82.—Since last note the condition of the wound has improved daily, healthy granulations forming in the interior, so that the drainage-tube can no longer be passed through; the exterior of the wound also presents a very healthy appearance. The discharge is still very free and perfectly sweet, and from

time to time fragments of bone and bits of shot continue to come away. On one or two occasions the urine presented the dark, smoky appearance suggestive of carbolic acid absorption, but on omitting to inject the wound with the usual 1 to 40 solution this discoloration gradually disappeared.

Jan. 26th.—Antiseptic dressings discontinued to-day; wounds to be dressed with simple carbolic lotion dressings, and patient allowed up; discharge from wound almost entirely ceased.

Feb. 16th.—A small abscess formed in neighborhood of wound on inner side of foot; opened to-day and about an ounce of pus escaped, a small spiculum of bone also coming away with the discharge.

March 15th.—Patient discharged from hospital; interior of wound almost completely filled; no deformity, and motion of ankle joint is perfect. The general condition of the patient was excellent throughout, the temperature never going above 99°, except on the 18th January, when for three days it was somewhat febrile, owing to a rather severe attack of follicular tonsillitis, and on the occasion of the formation of the abscess on February 17th, when it once registered 103°.

II.—*Case of Abscess of Kidney—Nephrotomy—Improvement.*
(Reported by Dr. HENDERSON.)

Hattie S., aged 20; good family history and previous good health up to the age of twelve, when she had a severe attack of what was called spinal meningitis, since which she has never been strong. Six years ago she began to suffer from pain low down in the back, and extending down the thighs, neuralgic in character, and considered to be sciatica by the doctor in attendance at the time. Shortly after this she began to suffer from frequent and painful micturition, and the urine was found to contain at times small quantities of matter and sometimes appeared quite bloody. She was then examined for stone, but none was found. In the following year (now four years ago), these symptoms continuing unabated, rapid dilatation of the urethra was effected, and a number of small villosities were removed from the mucous surface of the bladder; weak injections of nitric acid were made use of for some time, but without marked benefit to

the patient, the pain and frequency of micturition continuing off and on, sometimes better and sometimes worse, and the appearance of the urine very much the same. During the last fifteen months she has failed very much, losing flesh considerably. In July last she began to suffer from pain in right loin, and tenderness was marked in that region, but no swelling or fullness noticeable; she then also began to have repeated chills, with fever and frequent attacks of gastric and intestinal disorder. Last October Dr. Blackader, by whom she was being treated, found a well-defined tumour in right hypochondriac region, painful and tender on pressure. A hypodermic needle was used to explore, but no pus was reached. Since then she has been growing very much worse, and her symptoms greatly aggravated. Menses have been scanty and irregular during the last 3 years, and since September last have ceased altogether.

On admission, March 6th, she was much emaciated, and in a weak condition. A distinct and well-defined fluctuating tumor, painful on pressure, was found occupying the right hypochondriac and lumbar regions, and extending to within two inches of the umbilicus; a fine aspirating needle was introduced by way of exploring, and pus was reached. There is great frequency of micturition, the patient requiring to perform the act almost every half hour; but total amount of urine is somewhat diminished (about 32 ounces daily). On standing, it deposits pus very heavily; no blood. Lungs and heart normal. Liver dullness not well defined.

On the day following admission, a transverse incision was made in the loin, midway between crest of ilium and the border of the ribs, and the abscess cavity punctured with a trocar and then freely opened. After securing the sac to the outer wound by means of silk sutures, about 20 ounces of putrid pus escaped; the finger was then introduced into the cavity and the substance of the kidney was found to have been greatly involved in the morbid process. There was no evidence of a calculus being present. The cavity was well washed out with 1 to 40 solution of carbolic acid and a large-sized drainage-tube applied, with Lister's antiseptic dressings.

March 17th.—Since the operation the wound has been dressed daily; the discharge has been quite free and devoid of odor. On the third day after operation the urine showed signs of carbolic acid absorption, having a decided smoky appearance; accordingly, instead of injecting the wound with carbolic acid, a solution of boracic acid was used, of the strength of 20 per cent, after which the smokiness rapidly disappeared and the urine appeared quite natural. On the first day after the operation the amount was very much diminished, the patient only passing ten ounces in the 24 hours, but the amount increased gradually from day to day up to yesterday, when 40 ounces were passed; the frequency of micturition has very much diminished, as has also the pain before the act. Her general condition has improved very much; she feels much stronger, and takes her nourishment well. There is complete absence of all chilly sensations, and the temperature has been below 100° ever since the operation.

March 24th.—Patient removed to her home to be treated privately; previous to doing so, the antiseptic dressings were removed and instructions given to have the wound dressed daily simply by washing it out with the 20 per cent solution of boracic acid, retaining the drainage-tube in position, and placing a large pad of oakum as an outer dressing. The wound at time of exit had contracted to very small dimensions, just allowing the free passage of the drainage-tube. The condition of the patient had very much improved, so that for the last five or six days she had been let up about the wards in an easy chair.

Reviews and Notices of Books.

A Practical Treatise on Hernia.—By JOSEPH H. WARREN. Second and revised edition. Boston: James R. Osgood & Co., 1882.

From the fact that this work is so soon in its second edition we should judge that it has been appreciated. It has been written chiefly to make known the author's favorite method of treatment of hernia by injection of oak bark extract. In this undertaking he has been more fortunate than Prof. G. Dorvell,

of Texas, who wrote a book on hernia with the same object a few years ago, which has now passed into oblivion, though the peculiar method of treatment advised therein was worthy of a better fate. The method of curing hernia that the author advocates is that of the late Dr. Heaton, of Boston, who practised it with the greatest success for years, though as a secret operation. The method was not made public till 1877, when his book on hernia, edited by the late Dr. Davenport, was published. Dr. Warren, it appears, attended Dr. Heaton in his last illness. Dr. Heaton personally instructed him in the operation. Since Dr. Heaton's death Dr. Warren has endeavored to introduce Heaton's method of cure of hernia into the various centres of surgery both of America and Europe, and has communicated articles on the subject to numbers of medical journals.

The method consists in injecting the canal and tissues through which a hernia has passed with some astringent fluid. Dr. Heaton found that extract of white oak bark was the best fluid, and caused just sufficient irritation to produce closure of the canal by the production of inflammatory tissue. The fluid is injected by means of a syringe with a needle made out of a solid piece of metal bored and with the holes at the sides instead of, as in the ordinary hypodermic needle, at the end. This method is best suited to cases of reducible inguinal hernia. Dr. Heaton, in his book, affirms that it is perfectly harmless, and no serious results follow even if the peritoneum is injected. He, in many hundred operations, never had any fatal cases. After the patient has been operated on he should remain in bed for a week or ten days, with a bandage applied firmly to the part, and if there is any severe inflammation evaporating lotions of spirit and water should be used. Dr. Heaton was a most successful operator and his percentage of failures almost *nil*. Dr. Warren has improved on this method by, first, using a spiral or twisted needle with a somewhat blunt end, and secondly, employing a more concentrated fluid, that is, he evaporates the extract of white oak bark to the consistency of glycerine. Dr. Warren's book tells us very little more about hernia than can be found in any good text-book of surgery, and tells it to us in a manner which

is very much more spun out. With regard to Heaton's operation, we much prefer the description as given in Heaton's work. It is more concise and much better arranged. Dr. Warren adds a number of cases, very few of which are given in detail. Cures are reported too soon; we should like to have the condition of more patients noted a year or so subsequent to the operation.

Other methods for the radical cure of hernia are fully described, more especially those of somewhat recent date. This part will prove useful to those interested in the subject. Why is it that writers on any part of the male form between the navel and the knees always feel obliged to write a chapter on varicocele? Dr. Warren is no exception to the rule. A dozen pages are added to the end of the work on private and press opinions. Some of the extracts from private letters are merely acknowledgments of the receipt of the book. The press opinions are of course eulogistic. There are some beautiful anatomical plates reproduced from Bourgery and Blandin which add much to the usefulness of the book. On the whole, Dr. Warren has written a very interesting book, and one which has involved a great deal of labor. We hold, however, that it would have been much more satisfactory if he had given an account of the special operation he advocates with a detailed account of cases operated on and the results after some length of time had elapsed. We see that in the quotation heading the introduction Dr. Warren has conferred the long delayed and much merited honor of knighthood on T. Spencer Wells; a baronetcy would have been a more suitable reward.

The Prevention of Stricture and of Prostatic Obstruction.— By Reginald Harrison, F.R.C.S., Surgeon to the Royal Infirmary, Member of Council, Liverpool University College, and one of the Professors of Clinical Surgery in its Medical Faculty. London: J. & A. Churchill.

Mr. Harrison takes exception to the teaching of Dr. Otis that the continuance of gleet is indicative of the existence of a stricture and that the cure of the former depends upon the removal of the latter. On the contrary, he maintains the pathology

which we have been accustomed to believe in, viz., that a gonorrhœa leaves behind a chronic inflammation in a portion of the urethra, which is indicated by the presence of a gleety discharge, and which causes a granular condition of the mucous membrane. More solid infiltration of the neighboring strictures takes place, the secreting power of the membrane is lost, and with the disappearance of the gleet a stricture is found to have been formed. To prevent stricture, therefore, it is said we must cure the diseased state of the urethral lining, not simply dilate the canal by mechanical means. Injections by the ordinary syringe and internal medication are alike condemned as inefficient, and the means recommended consist in the thorough douching of the urethra with astringent solutions by means of a soft catheter and a Higginson's rubber syringe.

The equally important subject of prevention of the evils arising from prostatic enlargement is also treated of very suggestively. The first practical point made is that continued pressure upon the gland can hinder its enlarging in that direction. Thus, persistent catheterism is recommended from the very commencement of signs of tendency in the prostate to increase in size. This, though it cannot arrest the enlargement of the organ, will often prevent it from unduly encroaching upon the urethral canal. For this purpose olivary bougies, with a spreading bulb, have been found to answer best. A number of general rules are also laid down for the guidance of patients beginning to be affected in this way; and the employment of ergot of rye is said to have proved of assistance in maintaining the tonicity of the musculature of the bladder. This little *brochure* will be read with interest by all practitioners, and will be found to contain much useful and highly practical instruction.

A System of Surgery, Theoretical and Practical, in Treatises by various Authors.—Edited by T. HOLMES, M.A., Cantab, Surgeon to and Lecturer on Surgery at St. George's Hostal. First American from second English edition, thoroughly revised and much enlarged. By JOHN H. PACKARD, A.M., M.D., Surgeon to the Episcopal and St. Joseph's Hospitals,

Philadelphia; assisted by a large corps of the most eminent American surgeons. In three volumes, with many illustrations. Vol. II. Philadelphia: Henry C. Lea's Son & Co. Montreal: Dawson Brothers.

The second volume of this great standard work contains the following sections: viz., Diseases of the organs of special sense; Diseases of Circulatory System; Diseases of Digestive Tract; Diseases of Genito-Urinary Organs. The revision seems to have been very efficiently carried out, and the illustrations are quite numerous. Two colored lithographic plates representing typical changes in the retina are also added. Amongst the names of the well-known American surgeons who have acted as revisors in the various departments are the following: Drs. Harlan, J. Solis Cohen, Lewis A. Stimson, J. H. Packard, Edwd. L. Keyes, J. William White, and Alex. J. C. Skene. Too much praise cannot be given to the publishers for the admirable appearance of the volume as regards binding and typography.

A Study of the Tumors of the Bladder.—With original contributions and drawings. By ALEX. W. STEIN, M.D., Surgeon to Charity Hospital, Genito-Urinary and Venereal Division, Professor of Visceral Anatomy and Physiology at the N. Y. College of Dentistry, &c., &c. New York: Wm. Wood & Co. Montreal: J. M. O'Loughlin.

This is a monograph of considerable value upon some rare forms of disease. The author has met with four cases of tumor of the bladder, in two of which he secured *post-mortem* examinations. These have been the foundation of his study of the subject. He has collected together the literature of these growths, and furnishes a complete bibliography of the published cases. They are classified and discussed *seriatim*, all important details concerning their nature, symptomatology, diagnosis and treatment receiving careful attention. The work contains several drawings of the original cases, as well as many others taken from the published observations of other writers. The volume forms a valuable contribution to the surgery of the bladder.

Favorite Prescriptions of Distinguished Practitioners, with Notes on Treatmeut.—By B. W. PALMER, A.M., M.D. New York: Bermingham & Co.

This is a handy little book, small enough for the pocket, in which are to be found three or four hundred prescriptions of various classes of diseases. They have been compiled from the published writings and private memoranda of the best known English and American authorities. From an examination of a number of them, we can say that the selections appear to have been very judiciously made. This little collection will, we are sure, be very welcome to all, especially junior practitioners, because, though perhaps knowing the best remedies to use in a given case, it is not always easy for one, without much experience, to compile at a moment's notice an entirely suitable formula for its administration. Failing this, he can, by the assistance of the "favorite prescriptions," fall back upon the formula which has been recommended by Barker, Bartholow, Gross, Loomis, Fothergill, Sims, or some of the equally eminent writers and teachers.

Books and Pamphlets Received.

A SYSTEM OF SURGERY, THEORETICAL AND PRACTICAL, IN TREATISES BY VARIOUS AUTHORS. Edited by T. Holmes, M.A. First American from second English edition, thoroughly revised and much enlarged by John H. Packard, A.M., M.D., assisted by a large corps of the most eminent American surgeons. In three volumes. Vol. III. Philadelphia: Henry C. Lea's Son & Co.

NERVOUS DISEASES: THEIR DESCRIPTION AND TREATMENT. By Allan McLane Hamilton, M.D. Second edition. Philadelphia: Henry C. Lea's Son & Co.

DISEASES OF WOMEN: A MANUAL FOR STUDENTS AND PRACTITIONERS. By Arthur W. Edis, M.D. With one hundred and forty-eight illustrations. Philadelphia: Henry C. Lea's Son & Co.

Extracts from British and Foreign Journals.

Unless otherwise stated the translations are made specially for this Journal.

Extract from a Lecture on Tubercle.—By Sidney Coupland, M.D., F.R.C.P., Physician to and Lecturer on Pathological Anatomy at the Middlesex Hospital.—*Gentlemen:* Having, in my last lecture, given you as explicit an account of the general pathology of tubercle as far as I understand it, I propose to-day, before leaving this subject, to recapitu-

late to you these facts in the form of a concise summary. In doing so, you must allow me to adopt a somewhat aphoristic and dogmatic method; for I feel that upon this subject, of all in pathology, it is necessary for us to have clear and definite ideas. There is hardly any pathological question that has been so swayed by every wind of doctrine as this of tubercle; not even the subject of inflammation has been viewed from so many standpoints and received so many and varied explanations. The conclusions I am about to give you do not claim to be anything else than the formulated expression of ideas gathered from time to time from various sources. They embody simply the essential points I have learned from others, confirmed, so far as opportunities have been given me, by my own *post-mortem* experience. Therefore, they are in no way original or novel. I hope they may be nearer the truth in consequence; as near, that is, as our present knowledge allows us to go. My sole aim is to teach you the facts which are established, and the inferences that appear to flow from them, in the simplest and plainest manner.

1. Tuberculosis is an infective disease to which man and the higher animals are liable.

2. It is characterized anatomically by the formation of minute nodules or "granulations," composed of elements like those met with in granulation tissue, the result of simple reparative inflammation.

3. These nodules, or elementary or primary "tubercles," may occur in an isolated manner, or, by their confluence, may form larger or smaller conglomerate masses.

4. The typical structure of each fully formed primary nodule consists (*a*) in a collection of lymphoid round cells, enclosed in a delicate fibrillar meshwork or stroma: (*b*) in an internal zone, more or less evident, of larger nucleated epithelioid cells; and (*c*) a central multi-nucleated or giant cell.

5. These "tubercles" arise apparently in connection with the lymphatic tissue that pervades the body. No region is exempt from them. They may occur in the substance of organs, in the bones and muscles, in serous membranes, as the pia-arachnoid, pleura, pericardium, and peritoneum; in synovial membranes; in mucous membranes (arising in the submucous stratum), as in

the mouth, pharynx, larynx, trachea, bronchi, intestines, and genito-urinary tract.

6. Being ill supplied with blood-vessels, they can only attain a certain size, and then perish. The central cells degenerate first, because they are the farthest removed from the nutrient blood stream, and mutual pressure due to their increasing growth hampers their vital activity. They become fattily degenerated, soft, opaque, caseous, forming "yellow" tubercles, which, when isolated, are larger and manifestly of older formation than the miliary translucent grey granules. Where such tubercles are confluent, larger and more irregular caseous masses are formed. Caseation may pass into cretification. On the other hand, there is no doubt that occasionally the tubercular nodules take on a fibroid change, passing from the stage of "granulation-tissue" to one resembling "cicatricial tissue."

7. Almost invariably there occurs, in the vicinity of the tubercular formation, some reactive inflammation. This may be protective by ultimately leading to encapsulation by fibrous tissue of the caseated tubercular focus; or, as more frequently happens, it aids in the disintegration of the surrounding tissues, and leads, with the necrosis of the tubercles themselves, to destructive ulceration.

8. Individuals who are prone to the development of tubercle are called "tubercular." The disposition may be inherited. Probably what we recognize as "struma" or "scrofula" is only one form of this: a tendency to tuberculosis of lymphatic glands especially; just as in phthisical subjects we have a tendency to pulmonary tuberculosis.

9. The tubercular manifestation is, in the majority of cases, at first local, *i.e.*, limited to one organ or tissue. It may remain so limited throughout life—may not even endanger life—or may lead to death by the local destruction to which it gives rise. On the other hand, it may be more or less widely diffused throughout the body of the same individual. This diffusion may be due sometimes to the simultaneous development of tuberculosis in many parts. More frequently it is due to secondary dissemination by a process of infection.

10. This dissemination takes place, as in cancer, in two ways,

viz., by direct extension, or infection of neighboring tissues by contiguity; and by general distribution of the tubercular virus through the medium of the blood-system (including lymphatics).

11. The tubercular virus seems to be most potent, or, at any rate, to retain its potency, *i.e.*, its infective property, in the caseous state.

12. Examples of the local extension of tubercle, or of propagation by contiguous infection, are seen (1) in the development of peritoneal tubercle from intestinal; (2) in the spreading of tubercle from one part of an organ (*i.e.*, lung) to another part; (3) in extension from lung to pleura; (4) in bronchial, laryngeal and intestinal ulceration excited by the passage over their mucous membrane of material expectorated from a phthisical lung; (5) in tuberculosis of bladder and vesiculæ seminales following upon renal or testicular tubercle, etc. The mode of its local extension approximates tubercle to the neoplasmata, viz., by its elements exciting in the tissue they infect changes leading to the formation of cell-masses resembling the primary focus.

13. The generalisation of tubercle is shown in the disease known as acute miliary tuberculosis, which is characterized by an eruption of miliary granulations in diverse organs and tissues. Its mode of occurrence may be (as above) compared to the general dissemination of secondary cancer, or, perhaps with equal truth, to the metastatic suppuration of pyæmia. With few exceptions, it appears to necessitate a primary tubercular focus to give rise to it. It is believed that the infective virus, whatever it be, enters the blood-stream at this local focus, and is thence widely disseminated, the resulting growths being for the most part miliary, grey, and translucent; life not, as a rule, being prolonged for a sufficient length of time after the occurrence of the generalisation to permit of the growths becoming confluent or caseous. As the membranes of the brain are generally involved in this widespread infection, death occurs early.

14. Lastly, tuberculosis is inoculable. In this respect it resembles pyæmia, and differs from the cancers; for there is reason to think that it may be and is communicated from one human being to another, *e.g.*, from husband to wife, and *vice versâ;*

and that it can be inoculated in animals from man (artificial tubercle). There is, further, a possibility, based on certain peculiar morphological resemblances of the formations, that bovine tuberculosis is communicable to man.

15. If the foregoing data be true, it follows that tuberculosis is an infective disease, probably due to the presence of a virus, which gives rise to the development of peculiar tissue-formations, capable of localized or general propagation in the body, and characterized mainly by their tendency to early disintegration.

16. Until the nature of the virus is known, it is impossible to formulate data concerning the conditions under which the disease arises in subjects free from inherited taint.

Cascara Sagrada for Constipation.—For the past two years I have been making constant use in my practice of the fluid extract of Cascara Sagrada (*Rhamnus Purshiana*) for chronic constipation. It always affords relief in even the most obstinate and inveterate cases, and often seems to effect a permanent cure. My methods of using it are as follows: For persons who do not object to the intense bitter taste of the medicine in plain water, I order a two-ounce bottle of the fluid extract, with directions to begin by taking ten drops in a wineglass of water before each meal. If within two or three days this does not produce a regular natural evacuation every morning, the patient is told to increase the dose by two or three drops every day until the required effect is produced; then to continue with that amount regularly three times a day for a week or ten days. At the expiration of this time, I advise that the dose be decreased again by taking one drop less every day, until it is reduced to nothing. Then, if the habit of soliciting a movement punctually at a regular time every morning is kept up, there is usually no more difficulty. In many cases the initial dose of ten drops three times a day is quite sufficient. Occasionally it is found too much, and five or six drops answers every purpose. In the more obstinate cases, however,—cases of patients who have accustomed themselves to take three or four compound cathartic pills, or some harsher quack concoction, every few weeks

or days, "to keep their liver acting,"—the bowels sometimes require half a teaspoonful, and in rare instances even teaspoonful doses, three times a day to bring about regular alvine evacuations. Taken in this way before meals this medicine acts as a tonic to the stomach, increasing the appetite and improving the digestion, at the same time that it strengthens the peristaltic movements of the intestines and apparently stimulates the normal functions of the liver. But the cascara is one of the bitterest of medicines, and many persons, especially ladies and children, cannot take it unless it is first well disguised by elixirs, etc. For the benefit of these I have been accustomed to compound it as follows:—

℞ Ext. Cascara Sagrada, - - - - f℥vj.
Glycerinæ, - - - - - - - f℥j.
Curacoa, - - - - - - - - f℥ij.
Syr. Glycyrrhiz. ad - - - - - f℥vi. M.

A teaspoonful of this mixture, which is comparatively palatable, will represent about ten drops of the cascara; and a tablespoonful will represent half a teaspoonful of the same, which is usually all that the worst cases require, taking it three times a day. A solid extract of the same drug is now prepared, so that it can be ordered in proportionate doses in pill form for those who prefer pills to potions. These cascara preparations seem to me to act even better than the famous dinner pill, and other aloetic pills which have been so much in vogue for two generations at least. One thing is certain, they accomplish the purpose of a laxative most admirably, and usually—though not in every case—the dose can be diminished or even omitted altogether after a time, while other laxatives nearly always lose their effect, larger and larger doses becoming necessary.—*Dr. Boardman Reed in Medical Bulletin.*

Acute Follicular Tonsillitis.—Dr. M. Prince (*Boston Med. & Surg. Journal*, Feb. 2, 1882) discusses in an extended paper the question whether acute follicular tonsillitis is not at times a constitutional disease, and comes to the following conclusions: 1st, There is no constant relation between the

local inflammation and the constitutional symptoms. 2nd, There is no constant relation between the local inflammation and the height of the fever. 3rd, There is no constant relation between the height of the fever and the remaining constitutional symptoms. 4th, The fever is often so high as to be far out of proportion to the local symptoms, which may be slight. 5th, With slight fever and slight local inflammation may co-exist severe constitutional disturbances. 6th, The disease occurs in an epidemic form when it is undoubtedly constitutional. 7th, There are strong, though not conclusive, reasons for believing it to be more or less infectious. 8th, The frequency with which it occurs in hospitals is such as to be best explained on the theory of a septic action on the system. 9th, It is probably often mistaken for diphtheria, from which it differs greatly in its course and symptoms. While Dr. Prince does not claim that every case of catarrhal sore throat is a constitutional affection, he claims that there is good reason to believe that there is a very frequent form of sore throat in which the follicles and mucous membrane of the tonsils are chiefly involved, which is the localized expression of an essential fever which has not been generally recognized.—*Chicago Med. Review.*

Mackenzie on the use of the Œsophagoscope.—The author's œsophagoscope (*Med. Times and Gazette*, July 16, 1881) is a skeleton speculum, which only assumes a tubular shape after introduction, by flexion of the instrument on the handle. To the upper end of the speculum is attached a laryngeal mirror. In fifty cases in which it was tried, the author succeeded in using it thirty-seven times. He relates three cases in which the instrument was of service in treatment. In the first, the author saw a ragged projecting growth in the gullet, about three inches below the cricoid cartilage, and removed a piece about the size of a cherry, which, on examination, was found to be of epitheliomatous character. The patient lived six months after the operation, which the author considers to have prolonged life for four or five months. Case two presented an oval semi-transparent polypus, about the size

of a white currant, on the right side of the gullet, one inch below the cricoid cartilage. Complete recovery from the dysphagia ensued on removal of the growth. In case three, a flat lamella of bone, about four millimetres square, was seen about two inches below the cricoid cartilage, on the anterior wall of the œsophagus. It was removed with forceps, and complete recovery resulted.—*Lond. Med. Record.*

Nocturnal Incontinence of Urine in Children.—Few practitioners escape the care of frequent cases of children's nocturnal incontinence. It is one of the least dangerous, but at the same time one of the most annoying and persistent disorders of childhood, and any help we may get of a practical sort, especially in the way of prevention, will be welcome to our readers. A recent paper read before the Harveian Society by Dr. Tom Robinson has two homely hints that are of value, and to which we desire to call attention. "There is no doubt," he says, "that nurses and mothers are frequently to blame for this troublesome vice. Young children ought to be taken out of bed during the night and placed on a chamber, so as to excite their bladders to act." And again, "Fear will frequently prevent young people from rising in the dark to relieve themselves." If we instruct our patients to take up their children when they go to bed themselves, we shall do much, even in quite young children, to arrest the natural incontinence of infancy. And no parent should allow children to sleep without a dim but sufficient light, not only that they may readily find the chamber, or the water-closet, but that in case of fire or sudden illness darkness may not add its unknown terrors as a hindrance to their seeking aid, or the means of escape. If they sleep at a distance, or in different stories, the halls also should be lighted. —*Medical News.*

Do Pet Animals Communicate Contagious Diseases.—Dr. Wm. Bunce, of Oberlin, O., sends us a report of the following cases in support of the theory that pet animals may be the means of spreading fatal diseases. On May 1, 1881, he was called to see a boy 4 years old, of German

parentage, and one of six children. He was found to have diphtheria. On the following day the youngest daughter, 2 years of age, presented symptoms of the same disease, and on the next day the father and two more children were attacked. After this all the other members of the family, except the oldest boy, contracted the disease. A thorough examination of the house elicited no source of contagion, but in the barn a cat was found having the characteristic lesions of diphtheria. On inquiry, he ascertained that this cat, during its period of sickness, had been played with by the children. On August 20, 1881, he saw, with his son, Dr. W. C. Bunce, a lady, eighteen years old, who had diphtheria of a very severe type, which terminated fatally on the third day. In a short time the disease developed in the mother and remaining two daughters. A half-grown cat in the room was found to have well-marked diphtheritic membrane in its throat. It was also ascertained that its mother and her four other kittens had been in the same condition. The girls had endeavored to cure the cats by removing the deposit, in this way exposing themselves to the contagious influence of the disease. After the recovery of these cases, and the removal of the diseased animals, the spread of the disease ceased. He thinks it fair, therefore, to conclude that the diseased condition of the cats was the cause of the diphtheritic manifestations in the cases reported. Mention is made of these cases as they are of importance in the consideration of comparative medicine.—*Medical Record.*

Poisoning by Winslow's Soothing Syrup.—In the *Sanitary News*, December 15, 1881, there is a report of another death of a child, eight months old, from the administration of a teaspoonful of "Mrs. Winslow's Soothing Syrup," the symptoms of poisoning by morphia being well marked. Analyses of this dangerous nostrum have shown that each ounce of the syrup contains *one grain* of morphia, so the dose, according to the directions on the bottle, for a child eight months old, contained *one-eighth* of a grain of morphia. It is about time that legal proceedings should prohibit the sale of such dangerous compounds, when advertised as inoffensive.

CANADA

Medical and Surgical Journal.

MONTREAL, APRIL, 1882.

McGILL UNIVERSITY—MEETING OF CONVOCATION.

The anual meeting for conferring of degrees in the Faculty of Medicine was held in the William Molson Hall on Friday afternoon, 31st March, the room being crowded with students and friends of the University.

Professor Howard, Acting Dean of the Faculty, read the following prize and honor list in the Faculty of Medicine:—

The total number of students enregistered in this Faculty during the past year was 154, of whom there were from—

Ontario	75	Prince Edward Island	8
Quebec	33	Newfoundland	2
Nova Scotia	6	West Indies	1
Manitoba	2	United States	19
New Brunswick	8		

The following gentlemen, 33 in number, have passed their Primary Examination on the following subjects: Anatomy, Practical Anatomy, Chemistry, Practical Chemistry, Materia Medica and Pharmacy, Institutes of Medicine, and Botany or Zoology. Their names and residences are as follows:—

Addison, Jas. L., West Flamboro, O.
Carruthers, G., North Bedeque, P.E.I.
Cook, S. E., Aultsville, Ont.
Davies, T. B., Ottawa, Ont.
Duncan, J. A., Duncanville, Ont.
Elderkin, E. J., Apple River, N.S.
Gale, Hugh, Elora, Ont.
Gooding, C. E., Barbadoes, W.I.
Graham, G. A., Hamilton, Ont.
Henry, W. G, Chatham, Ont.
Johnson, J. R., Farmersville, Ont.
Johnston, Wyatt G., Sherbrooke, Q.
Martel, Ovide, Montreal, Q.
Meahan, J. C., Bathurst, N.B.
Maher, J. J., Albany, N.Y.
Menzies, John, Pembroke, Ont.
McDonald, N. J., Mt. Stewart, P.E.I.
McInernay, J. P., Kingston, N.B.
McLean, Isaac N., B.A., Pictou, N.S.
McLean, J. W., Strathlorne, N.S.
McLeod, Arch., B.A., Orwell, P.E.I.
McNeill, A., Charlottetown, P.E.I.

Nelson, W. M., Montreal, Q.
Phippen, S. S. C., Parkhill, Ont.
Porteous, Wm., Pembroke, Ont.
Renner, W. Scott, Jordan Station, O.
Ross, W. K., Goderich, Ont.
Rowell, Geo. B., Abbotsford. Q.
Smith, E. H., Prescott, Ont.
Smyth, Herbert E., Worcester, Mass.
Walker, Felix D., Launching, P.E.I.
Wilson, S. F., M.A., Springfield, N.B.
Wood, E. S., Faribault, Minn.

The following gentlemen, 27 in number, have fulfilled all the requirements to entitle them to the degree of M.D., C.M., from the University. These exercises consist in examinations, both written and oral, on the following subjects: Principles and Practice of Surgery, Theory and Practice of Medicine, Obstetrics and Diseases of Women and Children, Medical Jurisprudence and Hygiene; and also Clinical Examinations in Medicine and Surgery conducted at the bedside in the Hospital:—

Brown, Chas. O., Lawrenceville, Q.
Burland, Benj. W., Port Kent, N.Y.
Campbell, Lorne, Montreal, Q.
Cattanach, A. M., Dalhousie Mills, O.
Christie, Edmund, Lachute, Q.
Cousins, W. C., Ottawa, Ont.
Derby, W. J., North Plantagenet, O.
Duncan, W. T., Granby, Q.
Dunlop, H. A., Pembroke, O.
Dawson, R., B.A. (McGill), Montreal.
Gale, Hugh, Elora, Ont.
Grant, J. A., B.A. (Queen's), Ottawa.
Howard, Robt. J. B., B.A. (McGill), Montreal, Q.
Hurdman, B. F. W., Aylmer, Q.
Klock, R. F., Aylmer, Q.
McCorkill, R. K. C., Montreal, Q.
McDonald, A. R, Trinity, Texas.
McLean, T. N., Perth, Ont.
Musgrove, W. J., West Winchester, O.
Ogden, H. V., B. A. (Trinity), St. Catharines, O.
O'Brien, T. J. P., Worcester, Mass.
O'Keefe, Henry, Lindsay, Ont.
Rutherford, Clarendon, M.A. (Union), Waddington, N.Y.
Shaw, Alex., Seaforth, Ont.
Smith, E. W., A.B. (Yale), West Meriden, Conn.
Thompson, W. E., Harbor Grace, Nfld.
Thornton, H. W., B. A. (McGill), Montreal, Q.

Messrs. Howard and Campbell, natives of the Province of Quebec, have fulfilled all the requirements for graduation, but await the completion of four years from the date of passing the matriculation of the Provincial Board before receiving the degree. Mr. A. D. Struthers, who passed his examination last session, received his degree on this occasion.

The following have passed in Chemistry:—

Allan, J. H. B., Montreal, Q.
Barrett, Joseph, Prescott, Ont.
Cameron, D. A., Strathroy, Ont.
Doherty, W. W., Kingston, N.B.
Ferguson, W. A., B.A. (McGill), Richibucto, N.B.
Hallett, E. O., Truro, N.S.
Hutchison, J. A., Goderich, Ont.

Johnson, Charles H., Almonte, Ont.
Jolliffe, J. H., B.A., Cincinnati, Ohio.
Klock, W. H., Aylmer, Q.
Landor, T. J., London, Ont.
McClure, J., B.A. (McGill), ——
McKenzie, J. T., Plainfield, O.
O'Brien, T., Brudenell, O.
Ruttan, R. F., B.A. (Tor.), Napanee, O.
Sharp, J. C., Sussex, N.B.
Shibley, J. L., B.A. (Victoria), Yarker, O.
Shirriff, G. R., Huntingdon, Q.

The following have passed in Anatomy :—

Fairbanks, Chas. S., Oshawa, O.
Hutchison, J. A., Goderich, O.
Johnson, Chas. H., Almonte, O.
Jolliffe, J. H., B.A., Cincinnati, Ohio.
Landor, T. J., London, O.
McKenzie, J. T., Plainfield, O.
Park, James, Newcastle, N.B.
Sharp, J. C., Sussex, N.B.
Shirriff, G. R., Huntingdon, Q.
Smith, W. A., Montreal, Q.

The following have passed in Practical Anatomy :—

McKenzie, J. T., Plainfield, O.
O'Brien, T., Brudenell, O.

The following in Institutes of Medicine :—

Doherty, W. W., Kingston, N.B.
Fairbanks, Charles S., Oshawa, O.
Hutchison, J. A., Goderich, O.
Landor, T. J., London, O.
McKenzie, J. T., Plainfield, O.
O'Brien, T., Brudenell, O.
Sharp, J. C., Sussex, N.B.

The following have passed in Materia Medica :—

Landor, T. H., London, O.
Park, James, Newcastle, N.B.
Ross, L. D., Montreal, Q.
Sharp, J. C., Sussex, N.B.
Shirriff, G. R., Huntingdon, Q.
Smith, W. A., Montreal, Q.
Cameron, D. A., Strathroy, O.
Doherty, W. W., Kingston, N.B.
Fairbanks, Chas. S., Oshawa, O.
Ferguson, W. A., B.A., Richibucto, N.B.
Haldimand, A. W., Montreal, Q.
Johnson, C. H., Almonte, O.

The following have passed in Botany :—

CLASS I.—Wood (Prize), Harkin, Armitage, McMeekin, McGannon, Trapnell, and Irvine.

CLASS II.—Browning, Osborne, Robertson, McMillan (D. L.), Eberts, Hallett; Wilson, Hardman and Palmer (equal); Daly, Gustin, Baird; Carruthers and McLennan (equal); Johnson.

CLASS III.—Groves, Arthur, Hanna, Cattanach, McDonald (A. L.), McMillan (S. A.), Shaw, Brown, McDonald (H. J.), Corsan, Platt, Craig, Aylen, Erskine, Lynskey, McConnel, Cassidy, Dazé, Powell.

MEDALS, PRIZES AND HONORS.

The Holmes Gold Medal for the best examination in the Primary and Final Branches was awarded to R. J. B. Howard, B.A., Montreal.

The prize for the best final examination was awarded to H. V. Ogden, B.A., of St. Catharines, Ont.

The prize for the best primary examination was awarded to George A. Graham, of Hamilton, Ont.

The Sutherland Gold Medal was awarded to W. G. Johnston, of Sherbrooke, Q.

The Morrice Scholarship in Physiology was awarded to Wyatt G. Johnston, of Sherbrooke, Q.

The following gentlemen, arranged in the order of merit, deserve honorable mention:—

In the Final Examination—H. V. Ogden, B.A.; H. W. Thornton, B.A.; Rankin Dawson, B.A.; E. Christie, Alex. Shaw, and W. T. Duncan.

In the Primary Examination—G. Carruthers, G. B. Rowell, C. E. Gooding, W. G. Johnston, F. D. Walker, E. J. Elderkin, Alex. McNeill, W. G. Henry, and Arch. McLeod, B.A.

PROFESSOR'S PRIZES.

Botany—First prize, Edwin G. Wood, of Londesboro, O.

For the best collection of Plants—W. W. Doherty, of Kingston, N.B.

Practical Anatomy—Demonstrator's Prize, awarded to Geo. Carruthers, of Charlottetown, P.E.I., who was closely pressed by Charles E. Gooding, of Barbadoes.

MEDICAL FACULTY OF BISHOP'S COLLEGE.

The examinations in Medicine took place towards the end of last month.

The following gentlemen have passed the Primary Examination in Anatomy, Materia Medica, Physiology, Chemistry, Practical Chemistry and Practical Anatomy:—J. B. Saunders, Montreal, Q., first-class honors and Dr. David Scholarship (for highest number of marks in the primary branches); J. A. Caswell, Digby, N.S., first class honors; G. A. Balcom, Campbelltown, N.B.; E. Sirois, Montreal, Q., second class honors; W. D. M. Bell, New Edinburgh, O.; W. Pendergast, Montreal, Q.

The following gentlemen have passed the Final Examination

for degrees of C.M., M.D., in Practice of Medicine, Surgery and Obstetrics, Pathology, Medical Jurisprudence, Clinical Medicine and Clinical Surgery:—Heber Bishop, B.A., Marbleton, Q., first class honors and Wood Gold Medallist, (this medal is awarded to the graduate who has attended at least two six months' sessions at Bishop's College, and at the final examination has obtained the highest number of marks on all the subjects of professional examination); Ninian C. Smilie, Montreal, Q., first class honors and Chancellor's Prize; J. W. Cameron, Montreal, first class honors; Wm. D. M. Bell, New Edinburgh, Ont., and George A. Balcom, Campbelltown, N.B., second class honors; Walter Prendergast, Montreal.

At the special examination in Surgery, held subsequently, the Robert Nelson Gold Medal was awarded to H. Bishop, B.A. This medal (value $60) is presented annually for the best special examination in surgery, written, oral and practical, open to all candidates who have taken first class honors in all the subjects of the final examination, and who have attended at least two six months' sessions at Bishop's College.

In Practical Anatomy, the senior prize was awarded to E. Sirois, and the junior prize to R. C. Blackmer.

The prize in Botany was awarded F. R. England.

The following gentlemen receive honorable mention in the undermentioned subjects:—

Geo. W. Cameron, final examination; J. A. Caswell, primary examination; W. D. M. Bell, Medical Jurisprudence, Materia Medica; G. A. Balcom, Hygiene, Medical Jurisprudence; C. Lafontaine and Ernest Bronsdorph, Botany.

Medical Items.

The Uses of Maltine. By J. K. Bauduy, M.D.—"In all diseases of general debility, wasting or atrophic affections, and in nearly all varieties of indigestion, maltine is a therapeutic auxiliary, the most valuable I have as yet encountered, and I am daily more and more convinced of its advantages. With the long and very extensive practical experience I have had of its

value, I would be at an infinite loss to replace it in my daily practice, now that my confidence in its real merits has been so fully established. As a nutritive tonic I use it exclusively in the place of cod liver oil, and alone or in emulsion with the latter I deem it a most important and therapeutic agent in pulmonary affections, and, as I have said before, in neuralgia, epileptiform complications, many varieties of paralysis, chronic and numerous other neurotic affections, I have found it a most important adjunct when combined with the standard remedies usually administered in such cases. In many perversions of nutrition, such as the atonic and nervous varieties of dyspepsia, maltine has a most happy effect, correcting functional gastric disturbance, improving digestion, promoting assimilation and *rapidly increasing bodily weight.*"—*St. Louis Medical & Surgical Journal.*

A URETHRAL SYRINGE.—We would call the attention of physicians to the "Royal" Excelsior "P" Syringe, advertised in this Journal, which has been received with much favor by the medical profession, and the use of which is now directed in preference to any other Syringe by many eminent specialists. It has four advantages, viz., its greater capacity, its conical point, its ring handle, and the low price at which it is sold. Dr. E. Wigglesworth, of Harvard University, says: "I strongly urge it upon the profession as the best syringe in existence for the treatment of urethritis."

MILK FOOD.—We draw attention to the advertisement of the Anglo-Swiss Milk Food. It is claimed to be superior to any other farinaceous food for infants. As the highest authorities agree in condemning starchy food for young children, the Anglo-Swiss Condensed Milk Co. have overcome this objectionable feature of milk food by meeting an essential requirement in the method of preparing it. The Anglo-Swiss Milk Food is so prepared that when gradually heated with water, according to the directions for use, the starch contained in the materials used is converted, in a satisfactory degree, into soluble and easily digestible dextrine and sugar.